



Diagnostic Engineering Publication

1410/7010

IBM POUGHKEEPSIE
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Subject: Diagnostic Program M014 - 1410/7010-1401 TOPSY
Compatibility
Sequence Number 291
Replaces

- I. System and Channel One Cards 2 cards 001 - 002
- II. Program also includes an 86 card reader test deck for 1402 reader tests. This deck is not punched with a sequence number field. Description of the deck is provided in Section 2.00.08.0 of the program write-up.

Enclosures: 58 Pages
Card Deck for CARD ONLY SYSTEMS (as punched by UP51)
8 Cards - Card Loader (1-7) and 1 Core Clear
147 Cards No. 001 - 147 Data Cards
1 Card Execute Card

Distribution: X 1410
X 7010
Other

M014A
TOPSY PROGRAM
FOR
1410/7010 - 1401 COMPATIBILITY

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2.00.00.0 TEST DESCRIPTION

00.1 MODIFICATIONS

This is a new program.

00.2 DESCRIPTION

This program is designed to test the reliability of 1410/7010 while operating in 1401 mode. Routines included within this program provide tests of both CPU and I/O to supplement tests made in previous 1410/7010 - 1401 compatibility programs. Routines are executed in the following sequence:

Routines 1 - 8	CPU Tests
Routines 9 - 13	Printer Tests
Routines 14 - 15	Punch Tests
Routines 16 - 19	Routines to test card-tape, tape-tape, tape-punch and tape-print operations.
Routines 20 - 46	Scramble overlap I/O tests.

Note: An 86 card reader test deck is required for reader tests.
See Section 2.00.08.0 for list of reader test cards.

As with all 1410/7010 - 1401 compatibility programs, the system is assumed to be functioning properly while in 1410/7010 mode. The program therefore tests only those areas affected by 1401 compatibility circuits. The following programs should be run before testing with M014.

M011 - 1410/7010-1401 CPU Compatibility
M012 - 1410/7010-1401 I/O Compatibility

All test routines communicate with two common control routines to test for inquiry and to test TAD locations for looping routines, indicating errors and halting on error. Errors will normally be indicated by a six character typeout as follows:

ERR XXX *

* XXX indicates the three-digit representation of the five-digit error address.

Reference to the error address in the program listing will provide an explanation for the error.

00.2 DESCRIPTION (continued)

The program will normally make one complete pass of all CPU routines and all I/O routines for which ready units have been indicated as available in control set up before typing PASS and testing TAD3 for repeat of entire program. If TAD3 is not 1, the program will halt to change mode back to 1410/7010. Pressing computer reset and start will call in the next program. If TAD3 is a 1, program will halt to allow set up of I/O for next pass. Pressing computer reset and start will begin execution of the next pass.

Note: Immediately after the loading of the program and while the system is still in 1410/7010 mode, the units indicated as available in control area will be tested for ready status. The control area will be modified to bypass tests for non-ready devices. If tapes are to be tested, the two lowest numbered ready drives, excluding drive 0, will be used.

00.3 EQUIPMENT REQUIRED

CPU, console printer; optional units are 1402 Reader-Punch, 1403 Printer and 729 or 7330 tapes.

00.4 CARD DECK

7	Cards	Load Program
1	Card	Core Clear Card
	Cards numbered 001-147	Program
	Card numbered 001	Is Standard system control card
	Card numbered 002	Is Standard Channel 1 control card
1	Card	Execute Card (Branch to 02000)

00.5 MACHINE E. C. LEVEL

00.6 PASS LENGTH

Approximately 1/2 min. assuming a full system with bypass of manual routines.

2.00.01.0 LOADING PROCEDURE

01.1 FROM CARDS

A. 7010 - 1410 without Load Button

1. Clear memory
2. Display memory location 00000
3. Alter to
 $\begin{matrix} v & v & & v \\ RL\%1100011\$ \end{matrix}$ for channel 1 reader
 $\begin{matrix} v & v & & v \\ XL\%1100011\$ \end{matrix}$ for channel 2 reader
4. Set to Run, Computer Reset, Start.

B. 7010 with Load Button

1. Clear memory
2. Computer reset
3. Depress Load button

01.2 FROM TAPE (80 Character Master or Memory Dump Tape)

A. 7010 - 1410 without Load Button

1. Clear memory
2. Display memory location 00000
3. Alter to -
 $\begin{matrix} v & v & & v \\ RL\%B000011\$ \end{matrix}$ for channel 1 tape drive
 $\begin{matrix} v & v & & v \\ XL\%B000011\$ \end{matrix}$ for channel 2 tape drive
4. Set to Run, Computer Reset, Start.

B. 7010 with Load Button

1. Clear memory
2. Computer reset
3. Depress tape Load button

2.00.02.0 OPERATING PROCEDURE

Load program.

Program will type the following:

```
M014A
SET SENSE SW A ON
SET I/O CK STOP SW OFF
SET COMPATIBILITY SW TO 1401
PRESS START
```

A normal program halt will occur at 02008 to allow the operator to set switches as indicated in the typeout. The control area specifying units to be tested and/or TAD locations may also be modified at this time if desired. The control area will already have been modified at this point to bypass tests for non-ready devices indicated as available. To include a previously non-ready device, make it ready and alter control area accordingly before pressing Start. To include tapes, it will be necessary to alter locations 7991 and/or 7992 to the numbered drives to be used.

Note: An 86 card reader test deck is required for reader tests.
See Section 02.00.08.0 for list of reader test cards.

The following are control locations that are tested by the program:

Location 1291	Test 729 or 7330 tape unit specified in location 7991 if this location is a 1 (used as read tape).
Location 1292	Test 729 or 7330 tape unit specified in location 7992 if this location is a 1 (used as write tape).
Location 1301	Test 1402 reader if this location is an R.
Location 1303	Test 1402 punch if this location is a P.
Location 1305	Test 1403 printer if this location is a P.

2.00.02.0 OPERATING PROCEDURE (continued)

- Location 1306 If N, print only numeric data for numeric chain. If A, print data for alpha chain.
- Location 1257 Program tests this location for 0 to determine 10K memory. If not 0, greater than 10K memory is assumed.

Under normal conditions (all TADS 0 and no errors encountered) program will make one complete pass without stopping and then test TAD3 for repeat or continue. If it is desired to execute the manual routines along with the normal routines, it will be necessary to alter TAD4 (location 1004) to a 1. Manual routines are those that require manual intervention for proper execution such as disabling of print hammer, setting of switches, etc. Required steps of manual intervention will be indicated by a console printer typeout.

Normal program operations may be altered by using the Console Printer Inquiry routine to set one or several of the following TAD locations to "1."

<u>TAD</u>	<u>Address</u>	<u>If Not 1 (Normal)</u>	<u>If Set to 1</u>
0	01000 (=00)	Normal typeouts	Bypass all typeouts for scoping
1	01001 (=01)	No loops	Loop on present routine
2	01002 (=02)	No halts	Halt on error
3	01003 (=03)	1 pass only	Cycle program indefinitely
4	01004 (=04)	Bypass manual routines	Execute manual routines
5	01005 (=05)	No loops on same data	Loop routine using same data

The Console Printer Inquiry routine mentioned above may be used to alter TADS. To alter TADS do the following:

2.00.02.0 OPERATING PROCEDURE (continued)

Depress Inquiry Request Key

Note: If program is stopped when this key is depressed, it will be necessary to press computer start to branch on inquiry. Machine should type an I, make a space and unlock the keyboard for insertion of characters (1's or 0's) beginning at location 01000.

Key in the six numbers (0's and 1's) for desired set up of TAD0 - TAD5 (location 01000 - 01005).

Note: The program requires that the six digits always be altered even though it may be desired to change only TAD3 (location 01003). If an error is made during the key-in, the inquiry cancel key may be depressed to terminate the inquiry and branch program back to the same read console printer instruction.

Depress the inquiry release key to resume running.

2.00.03.0 OPERATING HINTS AND COMMENTS

1. Post restart for all routines is contained in locations 1901 - 1904. Locations 0001 - 0004 will contain a branch to 1901 to allow restart of any routine by depressing computer reset and start.
2. If a routine is causing an alarm failure and it is desired to loop the routine for scoping, do the following:
 - a. Alter TAD1 to 1 to loop the routine.
 - b. Turn the check control switch to RESET and RESTART mode.
 - c. If failure is occurring within a reader test, it may be desirable to duplicate the cards being used with the failing routine to allow for continuous looping.

Note: Altering TAD1 to 1 is desired for intermittent alarm failures to insure that the program will stay in the failing routine.

2.00.03.0 OPERATING HINTS AND COMMENTS (continued)

3. Normal print output for print test routines will include three types as follows:

Type 1	100 positions containing all 64 characters and beginning with BZ01
Type 2	26 lines of 20 positions (F-Z & 0-4)
Type 3	132 positions of PRBUSYTEST or PRTERRTST

If printer chain is numeric, types 1 and 3 above will appear as 0123456789 and only 0-4 will print in type 2. Any standard carriage tape may be used. The program will call for a skip to one during test for ready units while in 1410/7010 mode.

4. The routine to force punch errors allows ten cards to be punched and then reinserted in the punch feed, 9 edge first face down, to cause hole count checks. Almost any prepunched cards may be used for this test. Mention of this is made to allow for the processing of a larger card deck for the purpose of looping this routine.
5. Normal tape operations with tapes of sufficient lengths will not cause the encountering of end of reel with tape write instructions. Tape rewinds within the program are never bypassed, so that only several feet of tape will be used. If end of reel is encountered during tape writes, the program may rewind the tape prematurely or "END OF REEL" may type without rewinding. Either of these results may cause errors to occur such as non-compares when checking the data written, etc. They merely provide indication that End of Reel was encountered and it is suggested that longer reels of tape be used unless the branch on EOR appears to be erroneous.
6. Tape errors resulting in other than scramble overlap routines (21-46) will be indicated only after ten successive retries have been made. Within routines 21-46, however, a single read or write tape error will cause an error typeout. Within these routines a check for tape error is not made until the tape operation along with the associated I/O operation is completed. A few tape errors, therefore, may be tolerated during a pass of the program but should not be consistent.

2.00.03.0 OPERATING HINTS AND COMMENTS (continued)

7. If printouts are not inhibited, routine No. 4 to cause system check error with move of location containing no bits will result in two error printouts, one for channel A error and one for channel B error before typing message to restore CK control switch to normal.

2.00.04.0 PROGRAM STOPS AND RESTARTS

- | | | |
|---|-------|--|
| N | 02008 | Normal halt while in 1410/7010 mode following typeout of program ID and instructions for setting switches. Set switches and press Start. |
| N | 02223 | Normal halt following instruction message for altering location 7800. Alter this location to no bits (hold shift, depress 8 key), set CK control switch to restart and press Start.. |
| N | 02261 | Normal halt following message to restore CK control switch to normal. Set switch to normal and press Start. |
| N | 02772 | Normal halt following message to disable print hammer. Disable print hammer and press Start. |
| N | 02990 | Normal halt following message to restore print hammer. After restoring the print hammer, press Start.. |
| N | 03070 | Normal halt following message to insert cards in punch hopper. Insert last ten cards punched 9 edge first face down followed by blank cards in punch and press Start. |
| N | 05951 | Normal halt following message to set compatibility switch to 1410/7010. Set switch and press computer reset and start to continue. |

2.00.04.0 PROGRAM STOPS AND RESTARTS (continued)

- N 05961 Normal halt following completion of one program pass when TAD3 is set to 1. Depress computer reset and start for next pass.
- 06544 Halt following typeout indicating tape write error when TAD2 is set to 1. Press Start to attempt write again.
- 06689 Tape Read Error halt - occurs following typeout of tape read error message when TAD2 is set to 1. Press Start to continue.
- 06823 Halt following typeout indicating false TP EOF when TAD2 is set to 1. Press Start to continue.
- 06907 Error halt - occurs following error typeout when TAD2 is set to 1. Press Start to continue.

2.00.05.0 TYPEOUTS

05.1 NON-ERROR TYPEOUTS

M014A
SET SENSE SW A ON
SET I/O CK STOP SW OFF
SET COMPATIBILITY SW TO 1401
PRESS START

This typeout occurs after program is loaded while system is still in 1410/7010 mode.

ALTER LOC 7800 TO NO BITS SET CK CONTROL SW
TO RESTART AND PRESS START

SET CK CONTROL SW TO NORMAL PRESS START

These typeouts occur in routine 4 to force system check error with move of location containing no bits (will occur only when TAD4 is set to 1).

2.00.05.0 TYPEOUTS (continued)

DISABLE 1403 PRINT HAMMER PRESS START

RESTORE 1403 PRINT HAMMER TO NORMAL STATUS
PRESS START

These typeouts occur in routine to force printer error
(will occur only when TAD4 is set to 1).

READY 10 CARDS JUST PUNCHED IN
PUNCH 9 EDGE FIRST FACE DOWN
FOLLOWED BY BLANK CARDS PRESS START

This typeout occurs following punching of ten cards to be
used in force punch error routines (will occur only when
TAD 4 is set to 1).

SET COMPATIBILITY SW TO 1410/7010 PRESS COMPUTER
RESET AND START

This typeout occurs at end of program pass if TAD3 is not 1.

PASS

Occurs after one complete pass of the program.

05.2 ERROR TYPEOUTS

TP WR ERR XXX
TP RD ERR XXX

These typeouts will occur when ten successive tries to read
or write a record on tape in other than scramble overlap
routines have failed. XXX will be the three-digit represen-
tation of the five-position error address. See address
conversion chart. (These typeouts can occur only when
TAD0 does not contain a 1.)

END OF REEL

This typeout occurs whenever END OF REEL is sensed
when writing tape in other than scramble overlap routines.
(Can occur only when TAD0 does not contain a 1.)

05.2 ERROR TYPEOUTS (continued)

FALSE TP EOF XXX

This typeout occurs whenever a false end of file is detected when reading tape. XXX is the three-digit representation of the five-position error address; occurs only when TAD0 does not contain a 1.

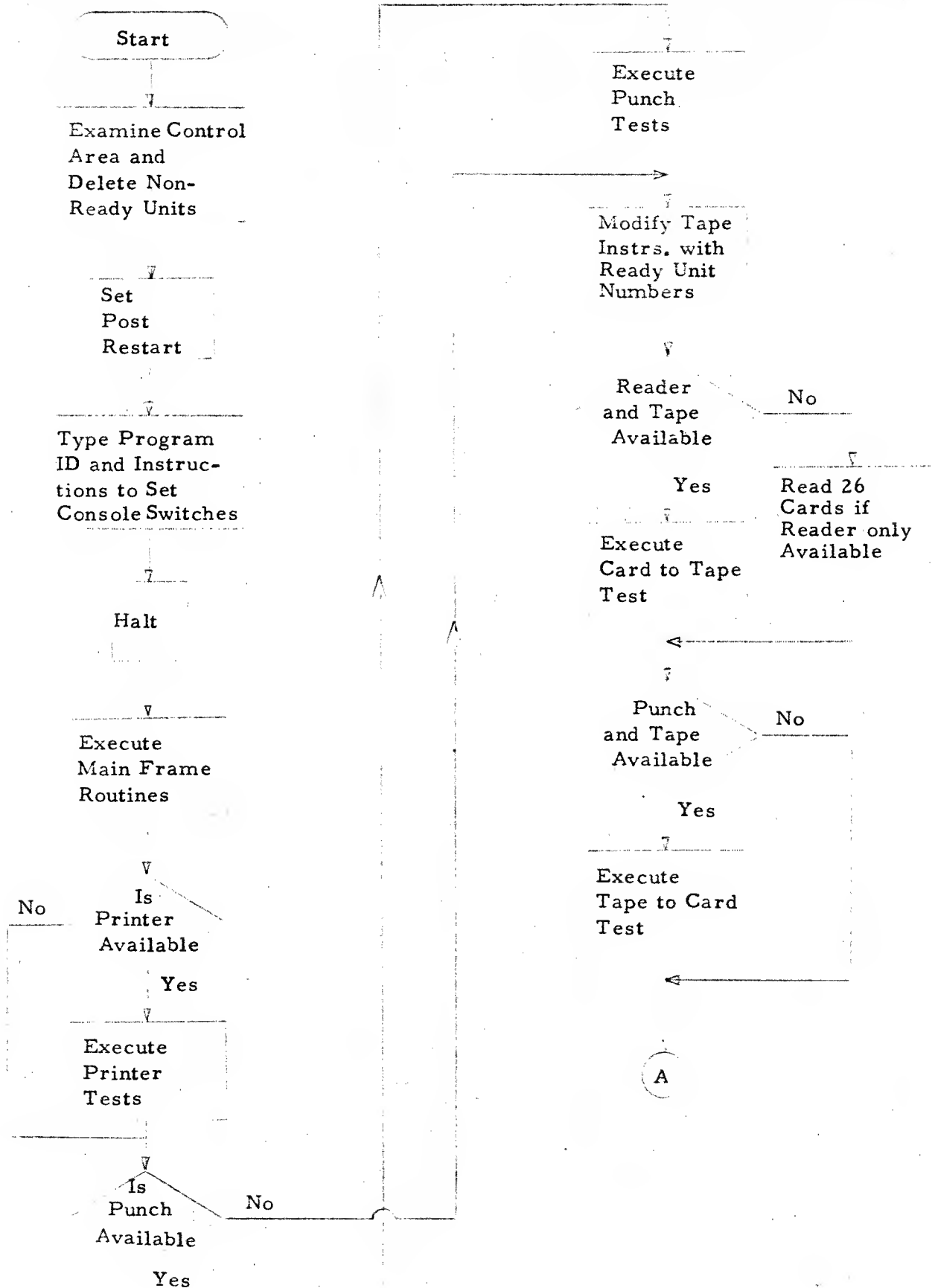
ERR XXX

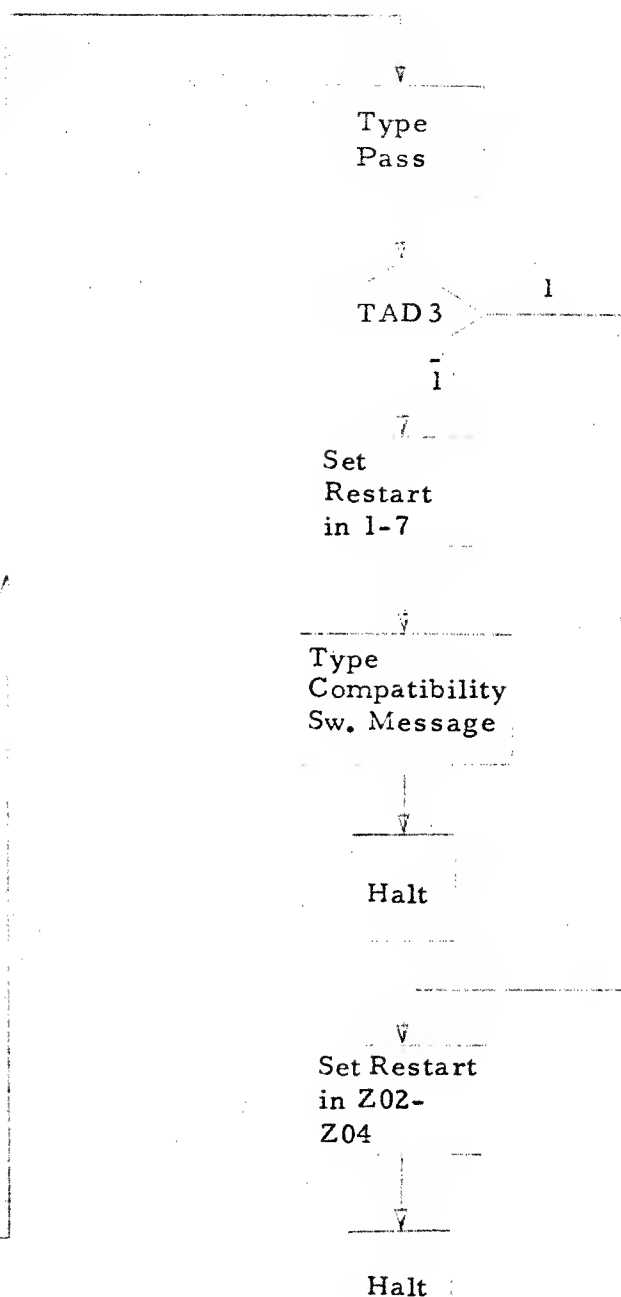
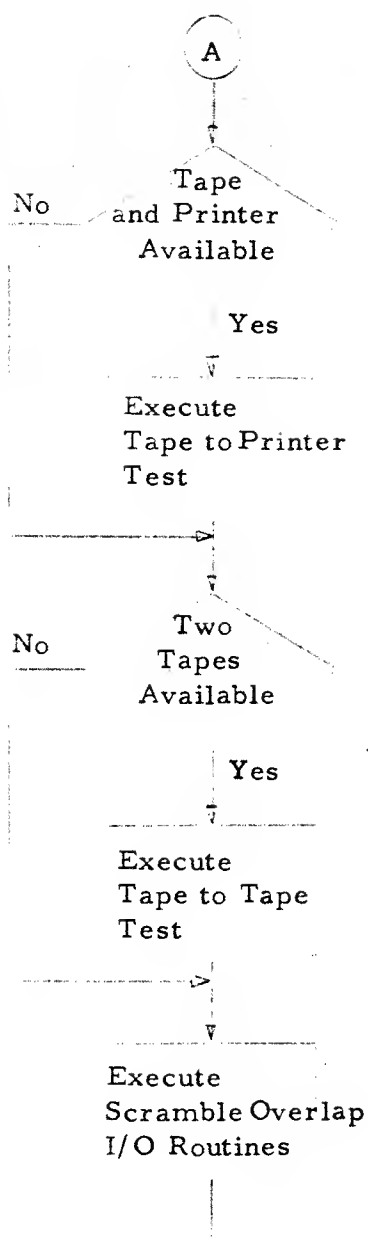
This typeout occurs whenever an error is detected within a test routine and TAD0 does not contain a 1. XXX is the three-digit representation of the five-position error address. Error addresses may be deciphered as follows:

B = 2	B = 8
A = 1	A = 4
0 0	0
Hundredths	Units

EX. ERR P2S

	B	A	
P2S =	7	2	2
	=		06722





ACTUAL ADDRESSES	ZONE BITS OVER HUNDREDS POSITION	ZONE BITS OVER UNITS POSITION	3-CHARACTER ADDRESSES
0000 to 0999 1000 to 1999 2000 to 2999 3000 to 3999	No Zone Bits A-Bit (Zero-Zone) B-Bit (11-Zone) AB-Bits (12-Zone)	No Zone Bits No Zone Bits No Zone Bits No Zone Bits	000 to 999 100 to 299 100 to R99 ?00 to 199
4000 to 4999 5000 to 5999 6000 to 6999 7000 to 7999	No Zone Bits A-Bit (Zero-Zone) B-Bit (11-Zone) AB-Bits (12-Zone)	A-Bit (Zero-Zone) A-Bit (Zero-Zone) A-Bit (Zero-Zone) A-Bit (Zero-Zone)	001 to 99Z 101 to 29Z 101 to R9Z ?01 to 19Z
8000 to 8999 9000 to 9999 10000 to 10999 11000 to 11999	No Zone Bits A-Bit (Zero-Zone) B-Bit (11-Zone) AB-Bits (12-Zone)	B-Bit (11-Zone) B-Bit (11-Zone) B-Bit (11-Zone) B-Bit (11-Zone)	001 to 99R 101 to 29R 101 to R9R ?01 to 19R
12000 to 12999 13000 to 13999 14000 to 14999 15000 to 15999	No Zone Bits A-Bit (Zero-Zone) B-Bit (11-Zone) AB-Bits (12-Zone)	AB-Bits (12-Zone) AB-Bits (12-Zone) AB-Bits (12-Zone) AB-Bits (12-Zone)	00? to 991 10? to 291 10? to R91 ?0? to 191

2.00.00.0 READER TEST DECK

N.014 READER TEST DECK

0 1 2 3 4 5 6 7 8
1.....0.....0.....0.....0.....0.....0.....0.....0

BZ01 AAAAAAAAAAAAAAAAAA
BZ01 PPPPPPPPPPPPPPPPPPP
BZ01 CCCCCCCCCCCCCCCCCC
BZ01 DDDDDDDDDDDDDDDDDDD
BZ01 EEEEEEEEEEEEEEEEEEE
BZ01 FFFFFFFFFFFFFFFFFF
BZ01 GGGGGGGGGGGGGGGGGG
BZ01 HHHHHHHHHHHHHHHHH
BZ01 IIIIIIIIIIIIIIIIIII
BZ01 JJJJJJJJJJJJJJJJJJ
BZ01 KKKKKKKKKKKKKKKKKK
BZ01 LLLLLLLLLLLLLLLLLLLL
BZ01 MMMMMMMMMMMMMMMMMM
BZ01 NNNNNNNNNNNNNNNNNN
BZ01 OOOOOOOOOOOOOOOOOO
BZ01 PPPPPPPPPPPPPPPPPP
BZ01 QQQQQQQQQQQQQQQQQQ
BZ01 RRRRRRRRRRRRRRRRRR
BZ01 SSSSSSSSSSSSSSSSSS
BZ01 TTTTTTTTTTTTTTTTTT
BZ01 UUUUUUUUUUUUUUUUUU
BZ01 VVVVVVVVVVVVVVVVVV
BZ01 WWWWXXXXXXXXXXXXXXXX
BZ01 XXXXXXXXXXXXXXXXXXXX
BZ01 YYYYYYYYYYYYYYYYYY
BZ01 ZZZZZZZZZZZZZZZZZZ

CARDS 27-36 PUNCHED AS FOLLOWS

+++++ ----- 0000 0
34567 34567 456734567+-2
BZ01 FGHIJKLMNOPQRSTUVWXYZ*Z01234567898888+88888-/*888888888008 ABCDEFGHIJK*MNOPQ
* IN COLS 25, 50 AND 75 INDICATE 3, 4, 5, 7, AND 8 PUNCHES

CARDS 37-36 PUNCHED AS FOLLOWS

+++++ ----- 00000 0
34567 34567 3456734567+-2
BZ01 FGHIJKLMNOPQRSTUVWXYZ*XYZ01234567898888+88888-/*888888888008 ABCDEFGHIJKLMNOPQ

1410/7010-1401 TOPSY COMPATIBILITY TEST

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SFX CT LOCN INSTRUCTION

SEQ PG LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
101 AA 00	000	JCH	1410/7010-1401 TOPSY COMPATIBILITY TEST				
102 AA 01		CIL	461111				
103 AA 03							
104 AA 04							
105 AA 06							
106 AA 07							
107 AA 08							
108 AA 09							
109 AA 10	TAC0	ECU	1000			1000	
110 AA 11	TAD1	ECU	1001			1001	
111 AA 12	TAD2	ECU	1002			1002	
112 AA 13	TAD3	ECU	1003			1003	
113 AA 14	TAD4	ECU	1004			1004	
114 AA 15	TAD5	ECU	1005			1005	
115 AA 16	SYSI	ECU	1256			1256	
116 AA 17	CHN1	ECU	1289			1289	
117 AA 18	START	ECU	2000			2000	
118 AA 19							
119 AA 20							
120 AA 21	ORG	SYSI					
121 AA 22	DC						
122 AA 23	DC						
123 AA 24							
124 AA 25	ORG	1239					
125 AA 26	DCW	21J8X0291-9a					
126 AA 27	DCW	2M014A2					
127 AA 28	DCW	21a					
128 AA 29							
129 AA 30	ORG	1000					
130 AA 31	DC	2000000a					
131 AA 32	DCW	21a					
132 AA 33							
133 AA 34	ORG	CHN1					
134 AA 35	DC						
135 AA 36	DC						

1256

32 1287
1 1288

1239

11 1249
5 1254
1 1255

1000

6 1005
1 1006

1289

32 1320
25 1345

SEQ PG LIN	LABEL	OP	OPERANDS	1410/7010-1401 TOPSY COMPATIBILITY TEST	SFX CT	LOCN	INSTRUCTION	PAGE
136 AA 38		JOB		1410/7010-1401 TOPSY COMPATIBILITY TEST				19
137 AA 40								
138 AA 41		CRG	1439				1439	
139 AA 42								
140 AA 43								
141 AA 44				LOOP CHECK ROUTINE				
142 AA 45				THIS ROUTINE IS ENTERED AT				
143 AA 46				COMPLETION OF TEST ROUTINE				
144 AA 47				TO CK FOR INQUIRY AND LOOP				
145 AA 48								
146 AA 49	LOCPC	SBR	LPEX&003		4	1439	H U59	
147 AA 50		BIN	ALTER,Q		5	1443	B U68 Q	
148 AA 51		BCE	POST-003,TAD1.1		8	1448	B 201 #01 1	
149 AA 52	LPEX	B	0000		4	1456	B 000	
150 AA 53	ERRLOC	DCW	ERR		7	1466		
151 AA 54		DCW	212		1	1467		
152 AA 55								
153 AA 56								
154 AA 57								
155 AA 58								
156 AA 59	ALTER	SBR	ALTEX&003	CONSOLE PRINTER INQUIRY ROUTINE	4	1468	M U88	
157 AA 60		MCW	X10,1000,R		8	1472	M X10 #00 R	
158 AA 61								
159 AA 62		BIN	*-012,*		5	1480	B U72 *	
160 AA 63	ALTEX	B	0000		4	1485	B 000	
161 AA 64								
162 AA 65								
163 AA 66								
164 AA 67								
165 AA 68								
166 AA 69								
167 AA 70	TAD5CK	SBR	TD5EX&003	ROUTINE TO TEST TADS FOR	4	1489	M V09	
168 AA 71		BIN	ALTER,Q	LOOP ON SAME DATA AND	5	1493	B U68 Q	
169 AA 72		BCE	0001,TAD5,1	TO TEST FOR INQUIRY	8	1498	B 001 #05 1	
170 AA 73	TD5EX	B	0000		4	1506	B 000	

SFX	CT	LOCN	INSTRUCTION
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
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20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
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44	44	44	44
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46	46	46	46
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52	52	52	52
53	53	53	53
54	54	54	54
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62	62	62	62
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64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
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69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
78	78	78	78
79	79	79	79
80	80	80	80
81	81	81	81
82	82	82	82
83	83	83	83
84	84	84	84
85	85	85	85
86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

SEQ	PG	LIN	LABEL	OP	OPERANDS
1	1	1	START	LD	R0, 0
2	1	2	LOOP	LD	R1, 0
3	1	3	END	LD	R2, 0
4	1	4	STOP	LD	R3, 0
5	1	5	START	LD	R4, 0
6	1	6	LOOP	LD	R5, 0
7	1	7	END	LD	R6, 0
8	1	8	STOP	LD	R7, 0
9	1	9	START	LD	R8, 0
10	1	10	LOOP	LD	R9, 0
11	1	11	END	LD	R10, 0
12	1	12	STOP	LD	R11, 0
13	1	13	START	LD	R12, 0
14	1	14	LOOP	LD	R13, 0
15	1	15	END	LD	R14, 0
16	1	16	STOP	LD	R15, 0
17	1	17	START	LD	R16, 0
18	1	18	LOOP	LD	R17, 0
19	1	19	END	LD	R18, 0
20	1	20	STOP	LD	R19, 0
21	1	21	START	LD	R20, 0
22	1	22	LOOP	LD	R21, 0
23	1	23	END	LD	R22, 0
24	1	24	STOP	LD	R23, 0
25	1	25	START	LD	R24, 0
26	1	26	LOOP	LD	R25, 0
27	1	27	END	LD	R26, 0
28	1	28	STOP	LD	R27, 0
29	1	29	START	LD	R28, 0
30	1	30	LOOP	LD	R29, 0
31	1	31	END	LD	R30, 0
32	1	32	STOP	LD	R31, 0
33	1	33	START	LD	R32, 0
34	1	34	LOOP	LD	R33, 0
35	1	35	END	LD	R34, 0
36	1	36	STOP	LD	R35, 0
37	1	37	START	LD	R36, 0
38	1	38	LOOP	LD	R37, 0
39	1	39	END	LD	R38, 0
40	1	40	STOP	LD	R39, 0
41	1	41	START	LD	R40, 0
42	1	42	LOOP	LD	R41, 0
43	1	43	END	LD	R42, 0
44	1	44	STOP	LD	R43, 0
45	1	45	START	LD	R44, 0
46	1	46	LOOP	LD	R45, 0
47	1	47	END	LD	R46, 0
48	1	48	STOP	LD	R47, 0
49	1	49	START	LD	R48, 0
50	1	50	LOOP	LD	R49, 0
51	1	51	END	LD	R50, 0
52	1	52	STOP	LD	R51, 0
53	1	53	START	LD	R52, 0
54	1	54	LOOP	LD	R53, 0
55	1	55	END	LD	R54, 0
56	1	56	STOP	LD	R55, 0
57	1	57	START	LD	R56, 0
58	1	58	LOOP	LD	R57, 0
59	1	59	END	LD	R58, 0
60	1	60	STOP	LD	R59, 0
61	1	61	START	LD	R60, 0
62	1	62	LOOP	LD	R61, 0
63	1	63	END	LD	R62, 0
64	1	64	STOP	LD	R63, 0
65	1	65	START	LD	R64, 0
66	1	66	LOOP	LD	R65, 0
67	1	67	END	LD	R66, 0
68	1	68	STOP	LD	R67, 0
69	1	69	START	LD	R68, 0
70	1	70	LOOP	LD	R69, 0
71	1	71	END	LD	R70, 0
72	1	72	STOP	LD	R71, 0
73	1	73	START	LD	R72, 0
74	1	74	LOOP	LD	R73,

171 AA 75	JCE	141G/7010-1401	TOPSY COMPATIBILITY TEST	2000
172 AA 77	CRG	2000		

2007
CNS

173 AA 78
174 AA 79
CCH 2J08500 2

175 AA 80
176 AA 81
177 AA 82
178 AA 83
179 AA 84

20

1 2007

```

LCA      RESTA6004,0005
          HALT TO SET COMP
          SW TO 1401
          PRESS START
          SET RESTART

```

7 2008 L £2W 005

ROUTINE NO. 1

EXECUTE BRANCH IF CHAR EQUAL
INSTRUCTION WITH INSTRUCTION
LENGTHS GREATER THAN 8
EXECUTE ROUTINE 5 TIMES

INSTR	OP	REG	VAL	PC	PC+1	PC+2	PC+3	PC+4	PC+5	PC+6	PC+7	PC+8	PC+9	PC+10	PC+11	PC+12	PC+13	PC+14	PC+15	PC+16	PC+17	PC+18	PC+19	PC+20	PC+21	PC+22	PC+23	PC+24	PC+25	PC+26	PC+27	PC+28	PC+29	PC+30	PC+31	PC+32	PC+33	PC+34	PC+35	PC+36	PC+37	PC+38	PC+39	PC+40	PC+41	PC+42	PC+43	PC+44	PC+45	PC+46	PC+47	PC+48	PC+49	PC+50	PC+51	PC+52	PC+53	PC+54	PC+55	PC+56	PC+57	PC+58	PC+59	PC+60	PC+61	PC+62	PC+63	PC+64	PC+65	PC+66	PC+67	PC+68	PC+69	PC+70	PC+71	PC+72	PC+73	PC+74	PC+75	PC+76	PC+77	PC+78	PC+79	PC+80	PC+81	PC+82	PC+83	PC+84	PC+85	PC+86	PC+87	PC+88	PC+89	PC+90	PC+91	PC+92	PC+93	PC+94	PC+95	PC+96	PC+97	PC+98	PC+99	PC+100	PC+101	PC+102	PC+103	PC+104	PC+105	PC+106	PC+107	PC+108	PC+109	PC+110	PC+111	PC+112	PC+113	PC+114	PC+115	PC+116	PC+117	PC+118	PC+119	PC+120	PC+121	PC+122	PC+123	PC+124	PC+125	PC+126	PC+127	PC+128	PC+129	PC+130	PC+131	PC+132	PC+133	PC+134	PC+135	PC+136	PC+137	PC+138	PC+139	PC+140	PC+141	PC+142	PC+143	PC+144	PC+145	PC+146	PC+147	PC+148	PC+149	PC+150	PC+151	PC+152	PC+153	PC+154	PC+155	PC+156	PC+157	PC+158	PC+159	PC+160	PC+161	PC+162	PC+163	PC+164	PC+165	PC+166	PC+167	PC+168	PC+169	PC+170	PC+171	PC+172	PC+173	PC+174	PC+175	PC+176	PC+177	PC+178	PC+179	PC+180	PC+181	PC+182	PC+183	PC+184	PC+185	PC+186	PC+187	PC+188	PC+189	PC+190	PC+191	PC+192	PC+193	PC+194	PC+195	PC+196	PC+197	PC+198	PC+199	PC+200	PC+201	PC+202	PC+203	PC+204	PC+205	PC+206	PC+207	PC+208	PC+209	PC+210	PC+211	PC+212	PC+213	PC+214	PC+215	PC+216	PC+217	PC+218	PC+219	PC+220	PC+221	PC+222	PC+223	PC+224	PC+225	PC+226	PC+227	PC+228	PC+229	PC+230	PC+231	PC+232	PC+233	PC+234	PC+235	PC+236	PC+237	PC+238	PC+239	PC+240	PC+241	PC+242	PC+243	PC+244	PC+245	PC+246	PC+247	PC+248	PC+249	PC+250	PC+251	PC+252	PC+253	PC+254	PC+255	PC+256	PC+257	PC+258	PC+259	PC+260	PC+261	PC+262	PC+263	PC+264	PC+265	PC+266	PC+267	PC+268	PC+269	PC+270	PC+271	PC+272	PC+273	PC+274	PC+275	PC+276	PC+277	PC+278	PC+279	PC+280	PC+281	PC+282	PC+283	PC+284	PC+285	PC+286	PC+287	PC+288	PC+289	PC+290	PC+291	PC+292	PC+293	PC+294	PC+295	PC+296	PC+297	PC+298	PC+299	PC+300	PC+301	PC+302	PC+303	PC+304	PC+305	PC+306	PC+307	PC+308	PC+309	PC+310	PC+311	PC+312	PC+313	PC+314	PC+315	PC+316	PC+317	PC+318	PC+319	PC+320	PC+321	PC+322	PC+323	PC+324	PC+325	PC+326	PC+327	PC+328	PC+329	PC+330	PC+331	PC+332	PC+333	PC+334	PC+335	PC+336	PC+337	PC+338	PC+339	PC+340	PC+341	PC+342	PC+343	PC+344	PC+345	PC+346	PC+347	PC+348	PC+349	PC+350	PC+351	PC+352	PC+353	PC+354	PC+355	PC+356	PC+357	PC+358	PC+359	PC+360	PC+361	PC+362	PC+363	PC+364	PC+365	PC+366	PC+367	PC+368	PC+369	PC+370	PC+371	PC+372	PC+373	PC+374	PC+375	PC+376	PC+377	PC+378
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4 4 2015 N -23

ADDR IN	202-204	4	2019	Q	204
BYPASS	RESET	8	2023	8	-64 #05 1

7 2031 L £3X -79

4 2038 □ -72

4	2050	1	1.41	089
7	2042	1	1.41	089

600 443 7 3407 1
600 443 7 3407 1
600 443 7 3407 1

7	E50C	D	-X-
4	F40Z	B	-X-

4	2507	W	1X-	0Y-
4	2507	W	1X-	0Y-

147 TX- 1502 1

8 2064 B -84 147 A

8 2079

4 2080 8 Q2X

4 2084 B U89

7 2088 A £45 089

7 2095 C 089 34V

5 2102 B -49 /

ROUTINE NO. 2

EXECUTE TWO ADDRESS SBR INSTR
H XXX YYY

4 2111 N J19

SET BUILT-START

1410/7010-1401 TOPSY COMPATIBILITY TEST

M014 PAGE 21

SEQ PG LIN	LABEL	OP	OPERANDS	SFX CT	LOCN	INSTRUCTION
221 AB 26		SAR	POST	4	2115	Q Z04
222 AB 27		LCA	ZER3,0089	7	2119	L E4# 089
223 AB 28		LCA	XX,TSBR	7	2126	L E5/ E4Y
224 AB 29		SBR	CO89,TSBR	7	2133	H 089 E4Y
225 AB 30		C	CO89,TSBRAN	7	2140	C 089 E5U
226 AB 31		8U	TYPI	5	2147	B Q5Y /
227 AB 32						
228 AB 33		C	TSBR,XXX	7	2152	C E4Y E5/
229 AB 34		BU	TYPI	5	2159	B Q5Y /
230 AB 35						
231 AB 36		B	LOPCK	4	2164	B U39
232 AB 37						
233 AB 38						
234 AB 39						
235 AB 40						
236 AB 41						
237 AB 42		NOP	*C005	4	2168	N J76
238 AB 43		SAR	POST	4	2172	Q Z04
239 AB 44		LCA	BKCYC,0089	7	2176	L Z8V 089
240 AB 45		NOP	IC00EX1,1000EX1	7	2183	N #0 #0
241 AB 46		B	LOPCK	4	2190	B U39
242 AB 47						
243 AB 48						
244 AB 49						
245 AB 50						
246 AB 51						
247 AB 52						
248 AB 53						
249 AB 54						
250 AB 55						
251 AB 56		BCE	EX8,IAD4,1	8	2194	B K06 #04 1
252 AB 57		B	RN5	4	2202	B K65
253 AB 58	EX8	NOP	MKSTP	4	2206	N K27
254 AB 59		SAR	POST	4	2210	Q Z04
255 AB 60		MCW	XT0,PROCMS-031,M	8	2214	M XT0 C5/ W
256 AB 61		H		1	2222	.
257 AB 62						
258 AB 63						
259 AB 64						
260 AB 65		SW	7801	4	2223	H 0/
261 AB 66	MKSTP	MCW	7800,7801	7	2227	M H0# H0/
262 AB 67		8IN	ROK8,2	5	2234	B K43 2
263 AB 68		B	TYPI-031	4	2239	B Q2X
264 AB 69						
265 AB 70						
266 AB 71		BIN	TYPI,2	5	2243	B Q5Y 2
267 AB 72						
268 AB 73		B	LOPCK	4	2248	B U39
269 AB 74		MCW	XT0,RESCK-031,M	8	2252	M XT0 A2W W
270 AB 75		H		1	2260	.

ROUTINE NO. 3
EXECUTE INDEXED NOP INSTRUCTION

SET ROUT START
ADDR IN Z02-Z04
LOAD XR1 - 19E
EXECUTE NOP

ROUTINE NO. 4
FORCE SYSTEM CHECK ERROR
WITH MOVE OF LOC. CONTAINING
EVEN NUMBER OF BITS
TEST BRANCH ON PROCESS ERROR
XLOC ALTERED TO EVEN BITS
FROM CONSOLE TYPEWRITER

CK FOR MANL TEST
BYPASS ROUTINE
SET ROUT START
ADDR IN Z02-Z04
TYPE MESSAGE
HALT TO ALTER
LOC 7800
HOLD SHIFT AND
DEPRESS KEY 8
SET WM
EXEC MOVE OP
CK FOR PROC ERR
PROGRAM FAILED
TO BR ON PROCESS
ERROR
ERR LATCH DID
NOT RESET
CK FOR LOOP
TYPE MESSAGE
HALT TO RESTORE

SEQ PG LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
271 AB 76							
272 AB 77							
273 AB 78							
274 AB 79							
275 AB 80							
276 AB 81							
277 AB 82							
278 AB 83							
279 AB 84							
280 AB 85							
281 AB 86							
282 AB 87							
283 AB 88							
284 AB 89							
285 AB 90							
286 AB 91							
287 AB 92							
288 AB 93							
289 AB 94							
290 AB 95							
291 AB 96							
292 AB 97							
293 AB 98							
294 AB 99							
295 AC 00							
296 AC 01							
297 AC 02							
298 AC 03							
299 AC 04							
300 AC 05							
301 AC 06							
302 AC 07							
303 AC 08							
304 AC 09							
305 AC 10							
306 AC 11							
307 AC 12							
308 AC 13							
309 AC 14							
310 AC 15							
311 AC 16							
312 AC 17							
313 AC 18							
314 AC 19							
315 AC 20							
316 AC 21							
317 AC 22							
318 AC 23							
319 AC 24							
320 AC 25							

ROUTINE NO. 5	ADD 99 TO I1 AND CHECK	FOR /0 RESULT WITH OVERFLOW
CK CONTROL SW		
CLEAR WORK AREA		
4 2261 / HO/		
4 2265 N K73		
4 2269 Q Z04		
7 2273 L B5/ 86X		
7 2280 A B62 86X		
7 2287 C B6X 85Z		
5 2294 B Q5Y /		
5 2299 B L08 Z		
4 2304 B Q2X		
4 2308 B U39		

ROUTINE NO. 6	ADD 99 TO /1 AND CHECK	FOR J0 RESULT WITH OVERFLOW
SET ROUT START		
ADDR IN Z02-Z04		
4 2312 N L20		
4 2316 Q Z04		
7 2320 L B5T 86X		
8 2327 A B62 86X E		
7 2335 C B6X B6/		
5 2342 B Q5Y /		
5 2347 B L56 Z		
4 2352 B Q2X		
4 2356 B U39		

ROUTINE NO. 7	ADD 99 TO J1 AND CHECK	FOR A0 RESULT WITH OVERFLOW
SET ROUT START		
ADDR IN Z02-Z04		
4 2360 N L68		
4 2364 Q Z04		
7 2368 L B5V 86X		
7 2375 A B62 86X		
7 2382 C B6X B6T		
5 2389 B Q5Y /		
5 2394 B M03 Z		
4 2399 B Q2X		
4 2403 B U39		

SFX CT LOCN INSTRUCTION

OPERANDS

LABEL OP

SEQ PG LIN

```

321 AC 26
322 AC 27
323 AC 28
324 AC 29
325 AC 30
326 AC 31
327 AC 32
328 AC 33
329 AC 34
330 AC 35
331 AC 36
332 AC 37
333 AC 38
334 AC 39
335 AC 40
336 AC 41
337 AC 42
338 AC 43
339 AC 44
340 AC 45
341 AC 46
342 AC 47
343 AC 48
344 AC 49
345 AC 50
346 AC 51
347 AC 52
348 AC 53
349 AC 54
350 AC 55
351 AC 56
352 AC 57
353 AC 58
354 AC 59
355 AC 60
356 AC 61
357 AC 62
358 AC 63
359 AC 64
360 AC 65
361 AC 66
362 AC 67
363 AC 68
364 AC 69
365 AC 70
366 AC 71
367 AC 72
368 AC 73
369 AC 74
370 AC 75

```

ROUTINE NO. 8
ADD 99 TO A1 AND CHECK
FOR 10 RESULT WITH OVERFLOW

```

NOP          *E005          SET ROUT START
SAR          POST          ADDR IN Z02-Z04
LCA          AAL6006,ADAREA
A            NINT9,ADAREA
C            ADAREA,ADAN6006
BU          TYPI
BAV          *E005
B            TYPI-031
B            LOOPCK
CS          0332
CS

```

ROUTINE NO. 9
PRINT 10 LINES AND
TEST BRANCH ON PRINTER BUSY

```

BCE          EX9,1305,P
B            RN14
NOP          *E005
SAR          POST
BCE          *E012,1306,N
MCH          PR8SEG,0332
B            *E00B
MCH          PR8NSG,0332
SW          0201
MCH          0332,0322
LCA          ZZZ,0089
LCA          ZZZZ,CYCNT
W
8PB          CKBUSY
C            CYCNT,ZZZZ
BE          TYPI
BIN          TYPI,*
A            ONE,0089
C            0089,Z10
BU          PT2
B            LOOPCK
CS          0332
CS

```

ROUTINE NO. 10
PRINT 10 LINES AND TEST

```

BCE          EX9,1305,P
B            RN14
NOP          *E005
SAR          POST
BCE          *E012,1306,N
MCH          PR8SEG,0332
B            *E00B
MCH          PR8NSG,0332
SW          0201
MCH          0332,0322
LCA          ZZZ,0089
LCA          ZZZZ,CYCNT
W
8PB          CKBUSY
C            CYCNT,ZZZZ
BE          TYPI
BIN          TYPI,*
A            ONE,0089
C            0089,Z10
BU          PT2
B            LOOPCK
CS          0332
CS

```

SEQ PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
371	AC 76							
372	AC 77							
373	AC 78							
374	AC 79							
375	AC 80		NOP	*E005	4		2581	N N89
376	AC 81		SAR	POST	4		2585	Q Z04
377	AC 82		BCE	*E012,1306,N	8		2589	B 008 T06 N
378	AC 83		MCW	PRBSEG,0332	7		2597	M B3V 332
379	AC 84		B	*E008	4		2604	B 015
380	AC 85		MCW	PRBNSG,0332	7		2608	M A0T 332
381	AC 86		SW	0201	4		2615	P 201
382	AC 87		MCW	0332,0322	7		2619	M 332 322
383	AC 88		LCA	ZZZ,0089	7		2626	L B4W 089
384	AC 89		LCA	ZZZZ,CYCNT	7		2633	L B4T B3Z
385	AC 90		W		1		2640	2
386	AC 91		BIN	TYPI,*	5		2641	B Q5Y *
387	AC 92		BPB	TYPI	5		2646	B Q5Y P
388	AC 93							
389	AC 94							
390	AC 95							
391	AC 96		A	ONE,0089	7		2651	A A1U 089
392	AC 97		C	0089,Z10	7		2658	C 089 E4V
393	AC 98		BU	PT3	5		2665	B 033 /
394	AC 99		B	LOOPCK	4		2670	B U39
395	AD 00		CS	0332	4		2674	/ 332
396	AD 01		CS		1		2678	/
397	AD 02							
398	AD 03							
399	AD 04							
400	AD 05							
401	AD 06							
402	AD 07							
403	AD 08							
404	AD 09							
405	AD 10							
406	AD 11							
407	AD 12							
408	AD 13							
409	AD 14							
410	AD 15							
411	AD 16							
412	AD 17							
413	AD 18							
414	AD 19							
415	AD 20							
416	AD 21							
417	AD 22							
418	AD 23							
419	AD 24							
420	AD 25							

FOR SYSTEM INTERLOCK EXECUTING
BR ON PRINT ERROR BEFORE
BR ON PRINT BUSY

SET ROUT START
ADDR IN Z02-Z04
CK FOR NUM CHAIN
MV DATA
MV DATA
TO PRINT AND
SPREAD IT OUT
RESET XR 1
RESET CNTR
PRINT LINE
PRINT ERROR
PROG BRANCHED ON
BUSY BR ON PRI
ERR DID NOT
CAUSE INTERLOCK
UP XR 1
CK FOR 10 LINES
PRINT NEXT LINE
CK FOR LOOP
CLEAR
PRINT AREA

ROUTINE NO. 11
EXECUTE CARRIAGE CONTROL
OPS AND TEST FOR
PRINTER CARRIAGE BUSY

SET ROUT. START
ADDR IN Z02-Z04
RESET XR 1
RESET CNTR
CK FOR BUSY
CK COUNTER
PROG DID NOT
BRANCH BUSY
AFTER CARR SPACE
UP XR 1
CK FOR 5 SPACES
SPACE AGAIN
CK FOR LOOP

ROUTINE NO 12

SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

471	AD	76	B	TYPI-031	BRANCH INSTR	4	2916	B Q2X
472	AD	77			CAUSED PRT ERROR			
473	AD	78			LATCH TO RESET			
474	AD	79	CKER1	TYPI,†	PREVIOUS BR OH	5	2920	B Q5Y †
475	AD	80			PRT ERR DID NOT			
476	AD	81			RESET ERROR LAT			
477	AD	82	A	ONE,0089	UP XR 1	7	2925	A AIU 089
478	AD	83	C	0089,210	CK FOR 10 LINES	7	2932	C 089 84V
479	AD	84	BU	PRI	PRINT NEXT LINE	5	2939	B R06 /
480	AD	85	B	LOOPCK	CK FOR LOOP	4	2944	B U39
481	AD	86	LCA	FRTHOU,0099	RESTORE	7	2948	L AIU 099
482	AD	87	LCA	SVLOC,0094	4000	7	2955	L A2V 094
483	AD	88	CW	4000	CLEAR WM	4	2962	□ 00#
484	AD	89	B	SVRES	AREA	4	2966	B R1W
485	AD	90	LCA	PRBSEG-C05, SAVA	RESTORE	7	2970	L B3# A2S
486	AD	91	CW	SAVA-004	SAVE AREA	4	2977	□ AIY
487	AD	92	MCW	‡TO, RESHAM-031, W	TYPE MESSAGE	8	2981	M ‡TO A6X W
488	AD	93	H		HALT TO RESTORE	1	2989	.
489	AD	94			PRINT HAMMER			
490	AD	95	CS	0332	CLEAR	4	2990	/ 332
491	AD	96	CS		PRINT AREA	1	2994	/

ROUTINE NO. 14

PUNCH 10 CARDS TO BE USED
IN BR ON PUNCH ERROR TEST
READY THESE CARDS IN PUNCH
FEEO AND FORCE BRANCHING ON
PUNCH ERR BY PUNCHING INTO
PRE PUNCHED CARDS

502	AE	07	RN14	EXB,1303,P	CK FOR PUNCH	B	2995	B 807 103 P
503	AE	08	B	TESTP		4	3003	B B54
504	AE	09	EXB	EX14, TAD4, 1	CK FOR MANUAL TS	8	3007	B 819 †04 1
505	AE	10		TESTP		4	3015	B B54
506	AE	11	EX14	PN14	SET ROUT START	4	3019	N 870
507	AE	12	SAR	POST	ADDR IN 202-204	4	3023	Q Z04
508	AE	13	LCA	ZZZ,0089		7	3027	L B4W 089
509	AE	14	LCA	RDCOMPE003,0180	LOAD DATA	7	3034	L C4Z 180
510	AE	15			PUNCH	1	3041	4
511	AE	16	PNDK1	ONE,0089	UP XR 1	7	3042	A AIU 089
512	AE	17	A	0089,21C	PUNCH	7	3049	C 089 84V
513	AE	18	C	PNDK1	10 CAROS	5	3056	B 841 /
514	AE	19	BU	‡TO, PNERMS-031, W	TYPE MESSAGE	B	3061	M ‡TO D2T W
515	AE	20	MCW		HALT TO READY	1	3069	.
516	AE	21	H		PUNCHED CARDS			
517	AE	22			IN PUNCH HOPPER			
518	AE	23			RESET XR 1	7	3070	L B4W 089
519	AE	24	PN14	ZZZ,0089	CLEAR PUNCH AREA	4	3077	/ 180
520	AE	25	CS	0180				

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SEQ	PG	LN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
521	AE	26		P					
522	AE	27	PNDK2	P			1	3081	4
523	AE	28		BIN	*E005,-		1	3082	4
524	AE	29		B	TYPI-031		5	3083	8 E92 -
525	AE	30					4	3088	8 Q2X
526	AE	31		BIN	TYPI,-				
527	AE	32		A	ONE,0089		5	3092	8 Q5Y -
528	AE	33		C	0089,ZZ5		7	3097	A A1U 089
529	AE	34		BU	PNDK2		7	3104	C 089 82V
530	AE	35		B	LOOPCK		5	3111	8 E82 /
531	AE	36					4	3116	8 U39
532	AE	37							
533	AE	38							
534	AE	39							
535	AE	40							
536	AE	41							
537	AE	42							
538	AE	43							
539	AE	44							
540	AE	45							
541	AE	46							
542	AE	47							
543	AE	48							
544	AE	49							
545	AE	50							
546	AE	51							
547	AE	52	EX2	LCA	8R8K1E004,8004		4	3120	N A28
548	AE	53		P	ZZZ,0089		4	3124	Q Z04
549	AE	54		BCE	EX3,1257,0		8	3128	B A61 S57 0
550	AE	55		B	8000		7	3136	L E2S 094
551	AE	56	BCKX	BIN	*E005,-		7	3143	L A2V 099
552	AE	57		B	TYPI-031		4	3150	B R1W 089
553	AE	58					7	3154	L E3S 00M
554	AE	59		A	ONE,0089		1	3168	4
555	AE	60		C	0089,ZZ5		8	3169	B A90 S57 0
556	AE	61		BU	EX2E007		4	3177	B 00-
557	AE	62		BCE	EN,1257,0		5	3181	B A90 -
558	AE	63		LCA	SVLOC,0094		4	3186	B Q2X
559	AE	64		LCA	ETHOU,0099		7	3217	L A2V 094
560	AE	65		CW	8000		4	3224	L E2S 099
561	AE	66		B	SVRES		4	3231	0 00-
562	AE	67		LCA	PR8SEG-005,SAVA		4	3235	B R1W
563	AE	68		CW	SAVA-004		7	3239	L B3# A2S
564	AE	69	EN	B	LOOPCK		4	3246	0 A1V
565	AE	70					4	3250	B U39
566	AE	71	TESTP	SW	0087,0092		7	3254	0 087 092
567	AE	72		NOP	RN16		4	3261	N D20
568	AE	73		SAR	0089		4	3265	Q 089
569	AE	74		NOP	DVLP		4	3269	N P1T
570	AE	75		SAR	0094		4	3273	Q 094

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SEQ PG LIN	LABEL	OP	OPERANDS	SFX CT	LOCN	INSTRUCTION
571 AE 76	OPCK	RWZ	CKPERU,0000EX1,1	8	3277	V C08 0+0 1
572 AE 77	G00	MA	ZZ1,0089	7	3285	# 622 089
573 AE 78		C	0089,0094	7	3292	C 089 094
574 AE 79		BU	OPCK	5	3299	H 877 /
575 AE 80		B	RESTPX	4	3304	B D02
576 AE 81	CKPERU	BCE	CKTT,0000EX1,M	8	3308	B C36 0+0 M
577 AE 82		BCE	CKTT,0000EX1,L	8	3316	B C36 0+0 L
578 AE 83		BCE	CKTT,0000EX1,U	8	3324	B C36 0+0 U
579 AE 84		B	G00	4	3332	B 885
580 AE 85	CKTT	C	0002EX1,IPINS1	7	3336	C 0+2 R9V
581 AE 86		BE	CKN1	5	3343	B C64 S
582 AE 87		C	0002EX1,IPINS2	7	3348	C 0+2 R9X
583 AE 88		HE	CKN1	5	3355	B C64 S
584 AE 89		B	G00	4	3360	B 885
585 AE 90	CKN1	BCE	FIX1,0003EX1,1	8	3364	B C80 0+3 1
586 AE 91	CKN2	BCE	FIX2,0003EX1,2	8	3372	B C91 0+3 2
587 AE 92	FIX1	MN	RTX,0003EX1	7	3380	O 19/ 0+3
588 AE 93		B	G00	4	3387	B 885
589 AE 94	FIX2	MN	WTX,0003EX1	7	3391	O 19S 0+3
590 AE 95		B	G00	4	3398	B 885
591 AE 96	RESTPX	MN	RTX,CKN1E007	7	3402	O 19/ C71
592 AE 97		MN	WTX,CKN2E007	7	3409	D 19S C79
593 AE 98		B	RN16	4	3416	B 020
594 AE 99						
595 AF 00						
596 AF 01						
597 AF 02						
598 AF 03						
599 AF 04						
600 AF 05						
601 AF 06						
602 AF 07	RN16	BCE	EX16,1301,R	8	3420	B 032 101 R
603 AF 08		B	RN17	4	3428	B E97
604 AF 09	EX16	NOP	*6005	4	3432	N D40
605 AF 10		SAR	POST	4	3436	Q Z04
606 AF 11		LCA	222,0089	7	3440	L 84W 089
607 AF 12		BLC	TYPI	5	3447	B 05Y A
608 AF 13						
609 AF 14						
610 AF 15		R	TYPI,6	1	3452	1
611 AF 16		BIN	GMWM,0025	5	3453	8 05Y 6
612 AF 17	LCA	LCA	*6005,1291,1	7	3458	L 69T 025
613 AF 18	BCE	B	ROK16	8	3465	B 077 S91 1
614 AF 19		B	WTAP3	4	3473	B E74
615 AF 20		B	WTAP3	4	3477	B 091
616 AF 21		CU	ZUL,B	5	3481	U ZUL B
617 AF 22		CU	ZUL,E	5	3486	U ZUL E
618 AF 23	WTAP3	MCW	ZUL,0001,M	8	3491	M ZUL 001 W
619 AF 24		NOP	0000	4	3499	N 000
620 AF 25		BEF	ENREEL	5	3503	B P3/ K

ROUTINE NO. 16
CARD TO TAPE TEST
READ 26 CAROS AND WRITE
CARD DATA ON TAPE 1
BACKSPACE TP1 AND READ
RECORDS TO CHECK DATA WRITTEN

CK FOR READER
BYPASS ROUTINE
SET ROUT. START
A00R IN Z02-Z04
RESET XR 1
CK FOR LAST CARO
ERR TYPE HERE
INDS FALSE EOF
READ CARO
INVALID READ
SET GMWM
CK FOR TAPE
GO TO WRITE TAPE
BACKSPACE
AND SKIP
WRITE TAPE
EXTRA INSTR
CK FOR EOR

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SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

621	AF	26	BER	TPWRER	CK FOR WR ERROR	5	3508	B	MSX	L
622	AF	27			ERR TYPE HERE					
623	AF	28			INOS THAT 10					
624	AF	29			TRYS USING 8KSP-					
625	AF	30			SKIP HAVE BEEN					
626	AF	31			MADE TO WR REC					
627	AF	32	LCA	ZZ,WRCNT	RESET ERR CNTR	7	3513	L	E3U	E3W
628	AF	33	CU	ZU1,B	BACKSPACE REC	5	3520	U	ZU1	B
629	AF	34	CS	WKAREAS025	READ REC	4	3525	/	H2V	
630	AF	35	*CW	ZU1,WKAREA,R	EXTRA INSTR	8	3529	M	ZU1	H0# R
631	AF	36	NCP	0000	CK FOR EOF ERR	4	3537	N	000	
632	AF	37	BEF	EOF1	TYPE HERE INDS	5	3541	B	P5U	K
633	AF	38			FALSE EOF					
634	AF	39	BER	TPROER	CK FOR READ ERR	5	3546	B	00S	L
635	AF	40			ERR TYPE HERE					
636	AF	41			INDS THAT 10					
637	AF	42			TRYS HAVE BEEN					
638	AF	43			MADE TO READ REC					
639	AF	44			RESET ERR CNTR					
640	AF	45	LCA	ZZ,ROCNT	CK	7	3551	L	E3U	E3Y
641	AF	46	C	WKAREAS023,0024	RECORD	7	3558	C	H2T	024
642	AF	47	BE	R0K16	TPI REC RD DOES	5	3555	B	E74	S
643	AF	48	B	TYPI-031	NOT COMP. WITH	4	3570	B	02X	
644	AF	49			CARD REC READ					
645	AF	50			UP XR 1	7	3574	A	AIU	089
646	AF	51	A	ONE,0089	CK FOR 26 RECS	7	3581	C	089	E4/
647	AF	52	C	0089,226	GET NEXT REC	5	3588	B	D47	/
648	AF	53	BU	EX16015	CK FOR LOOP	4	3593	B	U39	
649	AF	54	B	LOOPCK						
650	AF	55								
651	AF	56								
652	AF	57								
653	AF	58								
654	AF	59								
655	AF	60								
656	AF	61								
657	AF	62								
658	AF	63	RN17	BCE	CK FOR PUNCH	8	3597	B	F09	T03 P
659	AF	64	B	RN18	BYPASS ROUTINE	4	3605	B	G07	
660	AF	65	SCE	EX17,1291,1	CK FOR TAPE	8	3609	B	F21	S91 1
661	AF	66	B	RN18	BYPASS ROUTINE	4	3617	B	G07	
662	AF	67	B	PRETPI	WRITE TP 1	4	3621	B	LOZ	
663	AF	68	NCP	*E005	SET ROUT START	4	3625	N	F33	
664	AF	69	SAR	POST	ADOR IN 202-204	4	3629	Q	Z04	
665	AF	70	CU	ZU1,R	REWIND TAPE	5	3633	U	ZU1	R
666	AF	71	LCA	ZZZ,0089	RESET XR 1	7	3638	L	B4W	089
667	AF	72	CS	O180	CLEAR PUNCH	4	3645	/	180	
668	AF	73	*CW	ZU1,0101,R	READ TAPE REC	8	3649	M	ZU1	101 R
669	AF	74	NCP	0000	EXTRA INSTR	4	3657	N	000	
670	AF	75	BEF	EOF1	CK FOR EOF	5	3661	B	P5U	K

ROUTINE NO. 17
TAPE TO CARD TEST
WRITE 26 RECS ON TAPE 1
REWIND TAPE - READ AND
PUNCH THE 26 RECORDS

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SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

671 AF 76				ERR TYPE HERE	
672 AF 77				INDS FALSE EOF	
673 AF 78				CK FOR READ ERR	
674 AF 79				ERR TYPE HERE	
675 AF 80				INDS THAT 10	
676 AF 81				TRYS HAVE BEEN M	
677 AF 82				MADE TO READ REC	
678 AF 83				RESET ERR CNTR	
679 AF 84				PUNCH CARD	
680 AF 85				PUNCH ERR	
681 AF 86				UP XR 1	
682 AF 87				CK FOR 26 RECS	
683 AF 88				READ NEXT REC	
684 AF 89				CK FOR LOOP	
685 AF 90					
686 AF 91					
687 AF 92					
688 AF 93					
689 AF 94					
690 AF 95					
691 AF 96					
692 AF 97					
693 AF 98					
694 AF 99					
695 AG 00					
696 AG 01					
697 AG 02					
698 AG 03					
699 AG 04					
700 AG 05					
701 AG 06					
702 AG 07					
703 AG 08					
704 AG 09					
705 AG 10					
706 AG 11					
707 AG 12					
708 AG 13					
709 AG 14					
710 AG 15					
711 AG 16					
712 AG 17					
713 AG 18					
714 AG 19					
715 AG 20					
716 AG 21					
717 AG 22					
718 AG 23					
719 AG 24					
720 AG 25					

ROUTINE NO. 18
TAPE TO PRINTER TEST
WRITE 26 RECS ON TAPE 1
REWIND TAPE - READ AND
PRINT THE 26 RECORDS

671 AF 76	BER	TPRDER		ERR TYPE HERE	
672 AF 77				INDS FALSE EOF	
673 AF 78				CK FOR READ ERR	
674 AF 79				ERR TYPE HERE	
675 AF 80				INDS THAT 10	
676 AF 81				TRYS HAVE BEEN M	
677 AF 82				MADE TO READ REC	
678 AF 83				RESET ERR CNTR	
679 AF 84				PUNCH CARD	
680 AF 85				PUNCH ERR	
681 AF 86				UP XR 1	
682 AF 87				CK FOR 26 RECS	
683 AF 88				READ NEXT REC	
684 AF 89				CK FOR LOOP	
685 AF 90					
686 AF 91					
687 AF 92					
688 AF 93					
689 AF 94					
690 AF 95					
691 AF 96					
692 AF 97					
693 AF 98					
694 AF 99					
695 AG 00					
696 AG 01					
697 AG 02					
698 AG 03					
699 AG 04					
700 AG 05					
701 AG 06					
702 AG 07					
703 AG 08					
704 AG 09					
705 AG 10					
706 AG 11					
707 AG 12					
708 AG 13					
709 AG 14					
710 AG 15					
711 AG 16					
712 AG 17					
713 AG 18					
714 AG 19					
715 AG 20					
716 AG 21					
717 AG 22					
718 AG 23					
719 AG 24					
720 AG 25					

ROUTINE NO. 18
TAPE TO PRINTER TEST
WRITE 26 RECS ON TAPE 1
REWIND TAPE - READ AND
PRINT THE 26 RECORDS

671 AF 76	BER	TPRDER		ERR TYPE HERE	
672 AF 77				INDS FALSE EOF	
673 AF 78				CK FOR READ ERR	
674 AF 79				ERR TYPE HERE	
675 AF 80				INDS THAT 10	
676 AF 81				TRYS HAVE BEEN	
677 AF 82				MADE TO READ REC	
678 AF 83				RESET ERR CNTR	
679 AF 84				CK FOR NUM CHAIN	
680 AF 85				PRINT	
681 AF 86				GO TO CHECK	
682 AF 87				CK FOR NO ZONE	
683 AF 88				BYPASS RECORD	
684 AF 89				PRINT ERROR	
685 AF 90				UP XR 1	
686 AF 91					
687 AF 92					
688 AF 93					
689 AF 94					
690 AF 95					
691 AF 96					
692 AF 97					
693 AF 98					
694 AF 99					
695 AG 00					
696 AG 01					
697 AG 02					
698 AG 03					
699 AG 04					
700 AG 05					
701 AG 06					
702 AG 07					
703 AG 08					
704 AG 09					
705 AG 10					
706 AG 11					
707 AG 12					
708 AG 13					
709 AG 14					
710 AG 15					
711 AG 16					
712 AG 17					
713 AG 18					
714 AG 19					
715 AG 20					
716 AG 21					
717 AG 22					
718 AG 23					
719 AG 24					
720 AG 25					

ROUTINE NO. 18
TAPE TO PRINTER TEST
WRITE 26 RECS ON TAPE 1
REWIND TAPE - READ AND
PRINT THE 26 RECORDS

671 AF 76	BER	TPRDER		ERR TYPE HERE	
672 AF 77				INDS FALSE EOF	
673 AF 78				CK FOR READ ERR	
674 AF 79				ERR TYPE HERE	
675 AF 80				INDS THAT 10	
676 AF 81				TRYS HAVE BEEN	
677 AF 82				MADE TO READ REC	
678 AF 83				RESET ERR CNTR	
679 AF 84				CK FOR NUM CHAIN	
680 AF 85				PRINT	
681 AF 86				GO TO CHECK	
682 AF 87				CK FOR NO ZONE	
683 AF 88				BYPASS RECORD	
684 AF 89				PRINT ERROR	
685 AF 90				UP XR 1	
686 AF 91					
687 AF 92					
688 AF 93					
689 AF 94					
690 AF 95					
691 AF 96					
692 AF 97					
693 AF 98					
694 AF 99					
695 AG 00					
696 AG 01					
697 AG 02					
698 AG 03					
699 AG 04					
700 AG 05					
701 AG 06					
702 AG 07					
703 AG 08					
704 AG 09					
705 AG 10					
706 AG 11					
707 AG 12					
708 AG 13					
709 AG 14					
710 AG 15					
711 AG 16					
712 AG 17					
713 AG 18					
714 AG 19					
715 AG 20					
716 AG 21					
717 AG 22					
718 AG 23					
719 AG 24					
720 AG 25					

ROUTINE NO. 18
TAPE TO PRINTER TEST
WRITE 26 RECS ON TAPE 1
REWIND TAPE - READ AND
PRINT THE 26 RECORDS

671 AF 76	BER	TPRDER		ERR TYPE HERE	
672 AF 77				INDS FALSE EOF	
673 AF 78				CK FOR READ ERR	
674 AF 79				ERR TYPE HERE	
675 AF 80				INDS THAT 10	
676 AF 81				TRYS HAVE BEEN	
677 AF 82				MADE TO READ REC	
678 AF 83				RESET ERR CNTR	
679 AF 84				CK FOR NUM CHAIN	
680 AF 85				PRINT	
681 AF 86				GO TO CHECK	
682 AF 87				CK FOR NO ZONE	
683 AF 88				BYPASS RECORD	
684 AF 89				PRINT ERROR	
685 AF 90				UP XR 1	
686 AF 91					
687 AF 92					
688 AF 93					
689 AF 94					
690 AF 95					
691 AF 96					
692 AF 97					
693 AF 98					
694 AF 99					
695 AG 00					
696 AG 01					
697 AG 02					
698 AG 03					
699 AG 04					
700 AG 05					
701 AG 06					
702 AG 07					
703 AG 08					
704 AG 09					
705 AG 10					
706 AG 11					
707 AG 12					
708 AG 13					
709 AG 14					
710 AG 15					
711 AG 16					
712 AG 17					
713 AG 18					
714 AG 19					
715 AG 20					
716 AG 21					
717 AG 22					
718 AG 23					
719 AG 24					
720 AG 25					

ROUTINE NO. 18
TAPE TO PRINTER TEST
WRITE 26 RECS ON TAPE 1
REWIND TAPE - READ AND
PRINT THE 26 RECORDS

671 AF 76	BER	TPRDER		ERR TYPE HERE	
672 AF 77				INDS FALSE EOF	
673 AF 78				CK FOR READ ERR	
674 AF 79				ERR TYPE HERE	
675 AF 80				INDS THAT 10	
676 AF 81				TRYS HAVE BEEN	
677 AF 82				MADE TO READ REC	
678 AF 83				RESET ERR CNTR	
679 AF 84				CK FOR NUM CHAIN	
680 AF 85				PRINT	
681 AF 86				GO TO CHECK	
682 AF 87				CK FOR NO ZONE	
683 AF 88				BYPASS RECORD	
684 AF 89				PRINT ERROR	
685 AF 90				UP XR 1	
686 AF 91					
687 AF 92					
688 AF 93					
689 AF 94					
690 AF 95					
691 AF 96					
692 AF 97					
693 AF 98					
694 AF 99					
695 AG 00					
696 AG 01					
697 AG 02					
698 AG 03					
699 AG 04					
700 AG 05					
701 AG 06					
702 AG 07					
703 AG 08					
704 AG 09					
705 AG 10					
706 AG 11					
707 AG 12					
708 AG 13					
709 AG 14					
710 AG 15					
711 AG 16					
712 AG 17					
713 AG 18					
714 AG 19					
715 AG 20					
716 AG 21					
717 AG 22					
718 AG 23					
719 AG 24					
720 AG 25					

ROUTINE NO. 18
TAPE TO PRINTER TEST
WRITE 26 RECS ON TAPE 1
REWIND TAPE - READ AND
PRINT THE 26 RECORDS

671 AF 76	BER	TPRDER		ERR TYPE HERE	
672 AF 77				INDS FALSE EOF	
673 AF 78				CK FOR READ ERR	
674 AF 79				ERR TYPE HERE	
675 AF 80				INDS THAT 10	
676 AF 81				TRYS HAVE BEEN	
677 AF 82				MADE TO READ REC	
678 AF 83				RESET ERR CNTR	
679 AF 84				CK FOR NUM CHAIN	
680 AF 85				PRINT	
681 AF 86				GO TO CHECK	
682 AF 87				CK FOR NO ZONE	
683 AF 88				BYPASS RECORD	
684 AF 89				PRINT ERROR	
685 AF 90					

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SEQ PG LIN	LABEL	OP	OPERANDS	SFX CT	LOCN	INSTRUCTION
721 AG 26		C	0089,226	7	3825	C 089 E4/
722 AG 27		RU	NX18	5	3832	B G55 /
723 AG 28		B	LOOPCK	4	3837	B U39
724 AG 29						
725 AG 30						
726 AG 31						
727 AG 32						
728 AG 33						
729 AG 34						
730 AG 35						
731 AG 36						
732 AG 37						
733 AG 38	RN19	8CE	TESNUM,1291,1	8	3841	B H53 S91 1
734 AG 39		B	RN20	4	3849	B 05T
735 AG 40	TESNUM	8CE	EX19,1292,1	8	3853	B H65 S92 1
736 AG 41		B	RN20	4	3861	B 05T
737 AG 42	EX19	B	PRETP1	4	3865	B L02
738 AG 43		NOP	*E005	4	3869	N H77
739 AG 44		SAR	POST	4	3873	Q Z04
740 AG 45		CU	XU1,R	5	3877	U XU1 R
741 AG 46		LCA	ZZZ,0089	7	3882	L B4W 089
742 AG 47		LCA	GMWM,WKAREA051	7	3889	L E9T H5/
743 AG 48		CS	WKAREA050	4	3896	/ H54
744 AG 49		MCW	XU1,WKAREA021,R	8	3900	M XU1 H2/ R
745 AG 50		SW	WKAREA041	4	3908	/ H4/
746 AG 51		BEF	EOF1	5	3912	B P5U K
747 AG 52						
748 AG 53		BER	TPRDER	5	3917	B 005 L
749 AG 54						
750 AG 55						
751 AG 56						
752 AG 57						
753 AG 58						
754 AG 59		LCA	ZZ,RCNT	7	3922	L E3U E3V
755 AG 60		B	WTAP2	4	3929	B 143
756 AG 61		CU	XU2,B	5	3933	U XU2 B
757 AG 62		CU	XU2,E	5	3938	U XU2 E
758 AG 63		MCW	XU2,WKAREA021,W	8	3943	M XU2 H2/ W
759 AG 64	WTAP2	NOP	0000	4	3951	N 000
760 AG 65		BEF	ENREEL	5	3955	B P3/ K
761 AG 66		BER	TPWRER	5	3960	B M5X L
762 AG 67						
763 AG 68						
764 AG 69						
765 AG 70						
766 AG 71						
767 AG 72		LCA	ZZ,WRCNT	7	3965	L E3U E3W
768 AG 73		CU	XU2,B	5	3972	U XU2 B
769 AG 74		CS	WKAREA020	4	3977	/ H24
770 AG 75		MCW	XU2,WKAREA,R	8	3981	M XU2 H04 R

ROUTINE NO. 19

TAPE TO TAPE TEST
 WRITE 26 TWENTY CHAR RECORDS
 ON TAPE 1 - REWIND TAPE 1 AND
 TRANSFER RECS TO TAPE 2

CK FOR TAPES
 BYPASS TEST
 CK FOR 2 TAPES
 BYPASS TEST
 WRITE TAPE 1
 SET ROUT START
 ADDR IN Z02-Z04
 REWIND TAPE 1
 RESET XR 1
 LOAD GMWM
 READ RECORD
 SET WM
 CK FOR EOF ERR
 TYPE HERE INDS
 FALSE EOF
 CK FOR RD ERROR
 ERR TYPE HERE
 INDS THAT IO
 TRYS HAVE BEEN
 MADE TO READ REC
 RESET ERR CNTR
 GO TO WRITE TP2
 BACKSPACE
 & SKIP
 WRITE TAPE
 EXTRA INSTR
 CK FOR EOR
 CK FOR WRITE ERR
 ERR TYPE HERE
 INDS THAT IO
 TRYS USING 8KSP-
 SKIP HAVE BEEN
 MADE TO WR REC
 RESET ERR CNTR
 BACKSPACE TP 2
 CLEAR STORAGE
 READ RECORD

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SEQ PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
771	AG 76		NOP	0000				EXTRA INSTR
772	AG 77		BEF	EOF1	4		3989	N 000
773	AG 78				5		3993	B P5U K
774	AG 79							ERR TYPE HERE
775	AG 80							INDS FALSE EOF
776	AG 81							CK FOR READ ERR
777	AG 82							ERR TYPE HERE
778	AG 83							INDS THAT 10
779	AG 84							TRYS HAVE BEEN
780	AG 85							MADE TO READ REC
781	AG 86							RESET ERR CNTR
782	AG 87							COMPARE
783	AG 88							RECORDS
784	AG 89							REC READ FROM TP
785	AG 90							2 DOES NOT COMP.
786	AG 91							WITH REC WRITTEN
787	AG 92							ON TAPE 1
788	AG 93							UP XR 1
789	AG 94							CK FOR 26 RECS
790	AG 95							GET NEXT REC
791	AG 96							CK FOR LOOP
792	AG 97							
793	AG 98							
794	AG 99							
795	AG 00							
796	AG 01							
797	AG 02							
798	AG 03							
799	AG 04							
800	AG 05							
801	AG 06							
802	AG 07							
803	AG 08							
804	AG 09							
805	AG 10							
806	AG 11							
807	AG 12							
808	AG 13							
809	AG 14							
810	AG 15							
811	AG 16							
812	AG 17							
813	AG 18							
814	AG 19							
815	AG 20							
816	AG 21							
817	AG 22							
818	AG 23							
819	AG 24							
820	AG 25							

ROUTINE NO. 20	ROUTINE TO WRITE 100 80 CHAR	RECORDS ON TAPE 1 TO BE USED	AS INPUT IN SCRAMBLE OVLP ROUTINES
821	AG 01		
822	AG 02		
823	AG 03		
824	AG 04		
825	AG 05		
826	AG 06		
827	AG 07		
828	AG 08		
829	AG 09		
830	AG 10		
831	AG 11		
832	AG 12		
833	AG 13		
834	AG 14		
835	AG 15		
836	AG 16		
837	AG 17		
838	AG 18		
839	AG 19		
840	AG 20		
841	AG 21		
842	AG 22		
843	AG 23		
844	AG 24		
845	AG 25		

ROUTINE NO. 21	ROUTINE TO WRITE 100 80 CHAR	RECORDS ON TAPE 1 TO BE USED	AS INPUT IN SCRAMBLE OVLP ROUTINES
846	AG 01		
847	AG 02		
848	AG 03		
849	AG 04		
850	AG 05		
851	AG 06		
852	AG 07		
853	AG 08		
854	AG 09		
855	AG 10		
856	AG 11		
857	AG 12		
858	AG 13		
859	AG 14		
860	AG 15		
861	AG 16		
862	AG 17		
863	AG 18		
864	AG 19		
865	AG 20		
866	AG 21		
867	AG 22		
868	AG 23		
869	AG 24		
870	AG 25		

ROUTINE NO. 22	ROUTINE TO WRITE 100 80 CHAR	RECORDS ON TAPE 1 TO BE USED	AS INPUT IN SCRAMBLE OVLP ROUTINES
871	AG 01		
872	AG 02		
873	AG 03		
874	AG 04		
875	AG 05		
876	AG 06		
877	AG 07		
878	AG 08		
879	AG 09		
880	AG 10		
881	AG 11		
882	AG 12		
883	AG 13		
884	AG 14		
885	AG 15		
886	AG 16		
887	AG 17		
888	AG 18		
889	AG 19		
890	AG 20		
891	AG 21		
892	AG 22		
893	AG 23		
894	AG 24		
895	AG 25		

ROUTINE NO. 23	ROUTINE TO WRITE 100 80 CHAR	RECORDS ON TAPE 1 TO BE USED	AS INPUT IN SCRAMBLE OVLP ROUTINES
896	AG 01		
897	AG 02		
898	AG 03		
899	AG 04		
900	AG 05		
901	AG 06		
902	AG 07		
903	AG 08		
904	AG 09		
905	AG 10		
906	AG 11		
907	AG 12		
908	AG 13		
909	AG 14		
910	AG 15		
911	AG 16		
912	AG 17		
913	AG 18		
914	AG 19		
915	AG 20		
916	AG 21		
917	AG 22		
918	AG 23		
919	AG 24		
920	AG 25		

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

```

821 AH 26      LOOPCK
822 AH 27      NUMC2,1306,N
823 AH 28      RDCORP003,0280
824 AH 29      *0019
825 AH 30      PR8NSG,0280
826 AH 31      0201
827 AH 32      0280,0270
828 AH 33      MCM
829 AH 34      GMWM,0281
830 AH 35      RDCOMP003,0180
831 AH 36      LCA
832 AH 37      GMWM,0181
833 AH 38      RDCOMP003,WKAREAC079
834 AH 39      LCA
835 AH 40      GMWM,WKAREAC080
836 AH 41      RDCOMP003,0080
837 AH 42      LCA
838 AH 43      GMWM,0081
839 AH 44      LCA
840 AH 45      LCA
841 AH 46      LCA
842 AH 47      LCA
843 AH 48      LCA
844 AH 49      LCA
845 AH 50      LCA
846 AH 51      LCA
847 AH 52      LCA
848 AH 53      LCA
849 AH 54      LCA
850 AH 55      LCA
851 AH 56      LCA
852 AH 57      LCA
853 AH 58      LCA
854 AH 59      LCA
855 AH 60      LCA
856 AH 61      LCA
857 AH 62      LCA
858 AH 63      LCA
859 AH 64      LCA
860 AH 65      LCA
861 AH 66      LCA
862 AH 67      LCA
863 AH 68      LCA
864 AH 69      LCA
865 AH 70      LCA
866 AH 71      LCA
867 AH 72      LCA
868 AH 73      LCA
869 AH 74      LCA
870 AH 75      LCA

```

ROUTINE NO. 21
TEST BRANCH ON READ ERROR
WITH NORMAL READ INV CARD
FOLLOWED BY OVLP TAPE READ
AND THEN 82100

```

871 AH 76      EXAA,1301,R
872 AH 77      RN23
873 AH 78      *0005
874 AH 79      POST
875 AH 80      ZZZ,0089
876 AH 81      TPRINA,GORT0006
877 AH 82      SS
878 AH 83      R
879 AH 84      *0005,1291,1
880 AH 85      *0005
881 AH 86      TROX
882 AH 87      ER02,6
883 AH 88      TYP1-031
884 AH 89      ER02
885 AH 90      UPX1
886 AH 91      TRES2
887 AH 92      LOOPCK
888 AH 93      LCA
889 AH 94      LCA
890 AH 95      LCA
891 AH 96      LCA
892 AH 97      LCA
893 AH 98      LCA
894 AH 99      LCA
895 AH 100      LCA
896 AH 101      LCA
897 AH 102      LCA
898 AH 103      LCA
899 AH 104      LCA
900 AH 105      LCA
901 AH 106      LCA
902 AH 107      LCA
903 AH 108      LCA
904 AH 109      LCA
905 AH 110      LCA
906 AH 111      LCA
907 AH 112      LCA
908 AH 113      LCA
909 AH 114      LCA
910 AH 115      LCA
911 AH 116      LCA
912 AH 117      LCA
913 AH 118      LCA
914 AH 119      LCA
915 AH 120      LCA
916 AH 121      LCA
917 AH 122      LCA
918 AH 123      LCA
919 AH 124      LCA
920 AH 125      LCA
921 AH 126      LCA
922 AH 127      LCA
923 AH 128      LCA
924 AH 129      LCA
925 AH 130      LCA
926 AH 131      LCA
927 AH 132      LCA
928 AH 133      LCA
929 AH 134      LCA
930 AH 135      LCA
931 AH 136      LCA
932 AH 137      LCA
933 AH 138      LCA
934 AH 139      LCA
935 AH 140      LCA
936 AH 141      LCA
937 AH 142      LCA
938 AH 143      LCA
939 AH 144      LCA
940 AH 145      LCA
941 AH 146      LCA
942 AH 147      LCA
943 AH 148      LCA
944 AH 149      LCA
945 AH 150      LCA
946 AH 151      LCA
947 AH 152      LCA
948 AH 153      LCA
949 AH 154      LCA
950 AH 155      LCA
951 AH 156      LCA
952 AH 157      LCA
953 AH 158      LCA
954 AH 159      LCA
955 AH 160      LCA
956 AH 161      LCA
957 AH 162      LCA
958 AH 163      LCA
959 AH 164      LCA
960 AH 165      LCA
961 AH 166      LCA
962 AH 167      LCA
963 AH 168      LCA
964 AH 169      LCA
965 AH 170      LCA
966 AH 171      LCA
967 AH 172      LCA
968 AH 173      LCA
969 AH 174      LCA
970 AH 175      LCA
971 AH 176      LCA
972 AH 177      LCA
973 AH 178      LCA
974 AH 179      LCA
975 AH 180      LCA
976 AH 181      LCA
977 AH 182      LCA
978 AH 183      LCA
979 AH 184      LCA
980 AH 185      LCA
981 AH 186      LCA
982 AH 187      LCA
983 AH 188      LCA
984 AH 189      LCA
985 AH 190      LCA
986 AH 191      LCA
987 AH 192      LCA
988 AH 193      LCA
989 AH 194      LCA
990 AH 195      LCA
991 AH 196      LCA
992 AH 197      LCA
993 AH 198      LCA
994 AH 199      LCA
995 AH 200      LCA
996 AH 201      LCA
997 AH 202      LCA
998 AH 203      LCA
999 AH 204      LCA
1000 AH 205      LCA

```

ROUTINE NO. 22
TEST BRANCH ON READ ERROR
WITH OVLP READ INV CARD FOLLOWED
BY OVERLAP TAPE READ
AND THEN 82100

```

1001 AH 206      NOP
1002 AH 207      SAR
1003 AH 208      LCA
1004 AH 209      LCA
1005 AH 210      LCA
1006 AH 211      LCA
1007 AH 212      LCA
1008 AH 213      LCA
1009 AH 214      LCA
1010 AH 215      LCA
1011 AH 216      LCA
1012 AH 217      LCA
1013 AH 218      LCA
1014 AH 219      LCA
1015 AH 220      LCA
1016 AH 221      LCA
1017 AH 222      LCA
1018 AH 223      LCA
1019 AH 224      LCA
1020 AH 225      LCA
1021 AH 226      LCA
1022 AH 227      LCA
1023 AH 228      LCA
1024 AH 229      LCA
1025 AH 230      LCA
1026 AH 231      LCA
1027 AH 232      LCA
1028 AH 233      LCA
1029 AH 234      LCA
1030 AH 235      LCA
1031 AH 236      LCA
1032 AH 237      LCA
1033 AH 238      LCA
1034 AH 239      LCA
1035 AH 240      LCA
1036 AH 241      LCA
1037 AH 242      LCA
1038 AH 243      LCA
1039 AH 244      LCA
1040 AH 245      LCA
1041 AH 246      LCA
1042 AH 247      LCA
1043 AH 248      LCA
1044 AH 249      LCA
1045 AH 250      LCA
1046 AH 251      LCA
1047 AH 252      LCA
1048 AH 253      LCA
1049 AH 254      LCA
1050 AH 255      LCA
1051 AH 256      LCA
1052 AH 257      LCA
1053 AH 258      LCA
1054 AH 259      LCA
1055 AH 260      LCA
1056 AH 261      LCA
1057 AH 262      LCA
1058 AH 263      LCA
1059 AH 264      LCA
1060 AH 265      LCA
1061 AH 266      LCA
1062 AH 267      LCA
1063 AH 268      LCA
1064 AH 269      LCA
1065 AH 270      LCA
1066 AH 271      LCA
1067 AH 272      LCA
1068 AH 273      LCA
1069 AH 274      LCA
1070 AH 275      LCA
1071 AH 276      LCA
1072 AH 277      LCA
1073 AH 278      LCA
1074 AH 279      LCA
1075 AH 280      LCA
1076 AH 281      LCA
1077 AH 282      LCA
1078 AH 283      LCA
1079 AH 284      LCA
1080 AH 285      LCA
1081 AH 286      LCA
1082 AH 287      LCA
1083 AH 288      LCA
1084 AH 289      LCA
1085 AH 290      LCA
1086 AH 291      LCA
1087 AH 292      LCA
1088 AH 293      LCA
1089 AH 294      LCA
1090 AH 295      LCA
1091 AH 296      LCA
1092 AH 297      LCA
1093 AH 298      LCA
1094 AH 299      LCA
1095 AH 300      LCA
1096 AH 301      LCA
1097 AH 302      LCA
1098 AH 303      LCA
1099 AH 304      LCA
1100 AH 305      LCA

```

1410/7010-1401 TOPSY COMPATIBILITY TEST

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SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
871	AM	76		MCW	TPRINA, GORTE006				
872	AM	77	TRES1	B	CROX		7	4329	M 604 -6Y
873	AM	78		B	TROX		4	4336	B J1S
874	AM	79		BIN	ERO1, 6		4	4340	B -4W
875	AM	80		B	TYPI-031		5	4344	B 35T E
876	AM	81					4	4349	B Q2X
877	AM	82	ERO1	B	UPX1		4	4353	B Z8W
878	AM	83		B	TRES1		4	4357	B 33W
879	AM	84		B	LOOPCK		4	4361	B U39
880	AM	85							
881	AM	86							

ALTER TP RD INST
 READ CARD
 READ TAPE
 CK FOR CD RD ERR
 FAILED TO BR ON
 READ ERROR
 UP XR 1
 EXECUTE AGAIN
 CK FOR LOOP

1410/7010-1401 TOPSY COMPATIBILITY TEST
ROUTINE NO. 23
TEST OVERLAP TAPE WRITE
FOLLOWED BY OVERLAP TAPE READ

JCB

882 AH 88

883 AH 90

884 AH 91

885 AH 92

886 AH 93

887 AH 94

888 AH 95

889 AH 96

890 AH 97

891 AH 98

892 AH 99

893 AI 00

894 AI 01

895 AI 02

896 AI 03

897 AI 04

898 AI 05

899 AI 06

900 AI 07

901 AI 08

902 AI 09

903 AI 10

904 AI 11

905 AI 12

906 AI 13

907 AI 14

908 AI 15

909 AI 16

910 AI 17

911 AI 18

912 AI 19

913 AI 20

914 AI 21

915 AI 22

916 AI 23

917 AI 24

918 AI 25

919 AI 26

920 AI 27

921 AI 28

922 AI 29

923 AI 30

924 AI 31

925 AI 32

926 AI 33

927 AI 34

928 AI 35

929 AI 36

930 AI 37

931 AI 38

*E005

POST

ZZZ,0089

CC2,GOCKTIRE003

CC1,GORTE006

CC1,GOUTE006

CC2,GOCKTIRE019

TWOX

TROX

TYPI

SET ROUT START

ADDR IN Z02-Z04

RESET XR 1

ALTER CK INSTR

ALTER TP RD INST

ALTER TP WR INST

GO TO WRITE TAPE

GO TO READ TAPE

CK FOR TAPE ERR

ERR TYPE HERE

WILL NORMALLY

IND TAPE RD ERR

THIS WILL BE TP

WR ERR IF READ

TP IS NOT AVAIL.

CK WRITE

REC WRITTEN DOES

NOT COMPARE

CK READ

INCORRECT READ

UP XR 1

EXECUTE AGAIN

CK FOR LOOP

4 4365 N 37T

4 4369 Q 204

7 4373 L 84W 089

7 4380 M 81S 454

7 4387 M 80Z -6Y

7 4394 M 80Z JO/

7 4401 M 81S 41U

4 4408 B -7Z

4 4412 B -4W

5 4416 B 05Y L

CKTW

TYPI-031

8

8

CKTR

TYPI-031

8

8

UPX1

TWTR

8

8

LOOPCK

4 4421 B J7Z

4 4425 B Q2X

4 4429 B K3/

4 4433 B Q2X

4 4437 B Z8W

4 4441 B 40Y

4 4445 B U39

ROUTINE NO. 24

TEST OVERLAP TAPE WRITE

FOLLOWED BY OVERLAP CARD READ

*E005

POST

ZZZ,0089

TPRINA,GOUTE006

CC2,GOCKTIRE019

TWOX

CROX

TYPI

TYPI,2

CKTW

TYPI-031

NOP

SAR

LCA

MCW

MCW

8

8

8

8

8

8

8

8

8

8

SET ROUT START

ADDR IN Z02-Z04

RESET XR 1

ALTER TP WR INST

WRITE TAPE

READ CARD

TAPE WRITE ERR

CD READ ERR

CK WRITE

REC WRITTEN DOES

NOT COMPARE

CK CARD READ

INCORRECT READ

UP XR 1

4 4449 N 45X

4 4453 Q 204

7 4457 L 84W 089

7 4464 M 804 JO/

7 4471 M 81S 41U

4 4478 B -7Z

4 4482 B J1S

5 4486 B 05Y L

5 4491 B 05Y 2

4 4496 B J7Z

4 4500 B Q2X

4 4504 B K74

4 4508 B Q2X

4 4512 B Z8W

SEQ PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
932	AI 39		B	TWCR				
933	AI 40		B	LOOPCK				
934	AI 41							
935	AI 42							
936	AI 43							
937	AI 44							
938	AI 45							
939	AI 46							
940	AI 47							
941	AI 48							
942	AI 49							
943	AI 50							
944	AI 51							
945	AI 52							
946	AI 53							
947	AI 54							
948	AI 55							
949	AI 56							
950	AI 57							
951	AI 58							
952	AI 59							
953	AI 60							
954	AI 61							
955	AI 62							
956	AI 63							
957	AI 64							
958	AI 65							
959	AI 66							
960	AI 67							
961	AI 68							
962	AI 69							
963	AI 70							
964	AI 71							
965	AI 72							
966	AI 73							
967	AI 74							
968	AI 75							
969	AI 76							
970	AI 77							
971	AI 78							
972	AI 79							
973	AI 80							
974	AI 81							
975	AI 82							
976	AI 83							
977	AI 84							
978	AI 85							
979	AI 86							
980	AI 87							
981	AI 88							

ROUTINE NO. 25
TEST OVERLAP TAPE WRITE
FOLLOWED BY OVERLAP CARD PUNCH

SET ROUT START
 ADDR IN 202-204
 RESET XR 1
 ALTER TP WR INST
 WRITE TAPE
 PUNCH CARD
 TAPE WRITE ERR
 PUNCH ERROR
 CK WRITE
 REC WRITTEN DOES
 NOT COMPARE
 UP XR 1
 EXECUTE AGAIN
 CK FOR LOOP

ROUTINE NO. 26
TEST OVERLAP TAPE WRITE
FOLLOWED BY PRINT

SET ROUT START
 ADDR IN 202-204
 RESET XR 1
 ALTER TP WR INST
 WRITE TAPE
 PRINT
 TAPE WRITE ERR
 PRINT ERROR
 CK WRITE
 REC WRITTEN DOES
 NOT COMPARE
 UP XR 1
 EXECUTE AGAIN
 CK FOR LOOP

ROUTINE NO. 27
TEST OVERLAP TAPE WRITE
FOLLOWED BY OVERLAP TAPE WRITE

1410/7010-1401 ICPSY COMPATIBILITY TEST

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SFX CT LOCN INSTRUCTION

SEQ PG L'IN LABEL OP OPERANDS

982	AI	89	NOP	*E005	SET ROUT START	4	4658	N	66W
983	AI	90	SAR	POST	ADDR IN 202-204	4	4662	Q	204
984	AI	91	LCA	ZZZ-0089	RESET XR 1	7	4655	L	84W 089
985	AI	92	MCW	CC1, GOUTE006	ALTER TP WR INST	7	4673	M	E02 J0/
986	AI	93	MCW	CC2, GCKTWE019		7	4680	M	E1S K1U
987	AI	94	B	TWDX	WRITE TAPE	4	4687	B	-7Z
988	AI	95	B	TWDX	WRITE TAPE	4	4691	B	-7Z
989	AI	96	BER	TYPI	TAPE WRITE ERR	5	4695	B	Q5Y L
990	AI	97	B	CKTW	CK WRITE	4	4700	B	J7Z
991	AI	98	B	TYPI-031	2ND REC WRITTEN	4	4704	B	Q2X
992	AI	99	B		DOES NOT COMPARE				
993	AJ	00	B	UPX1	UP XR 1	4	4708	B	Z8W
994	AJ	01	B	TRTW	EXECUTE AGAIN	4	4712	B	68X
995	AJ	02	B	LOOPCK	CK FOR LOOP	4	4716	B	U39
996	AJ	03							
997	AJ	04							
998	AJ	05							
999	AJ	06							
1000	AJ	07							
1001	AJ	08							

ROUTINE NO. 28
TEST OVERLAP TAPE READ
FOLLOWED BY OVERLAP TAPE WRITE

1002	AJ	09	NOP	*E005	SET ROUT. START	4	4720	N	72Y
1003	AJ	10	SAR	POST	ADDR IN 202-204	4	4724	Q	204
1004	AJ	11	LCA	ZZZ-0089	RESET XR 1	7	4728	L	84W 089
1005	AJ	12	MCW	CC1, GORTE006	ALTER TP RD INST	7	4735	M	E02 -6Y
1006	AJ	13	MCW	CC1, GOUTE006	ALTER TP WR INST	7	4742	M	E02 J0/
1007	AJ	14	MCW	CC2, GCKTRE003	ALTER CK INSTR	7	4749	M	E1S K5#
1008	AJ	15	MCW	CC2, GCKTWE019		7	4756	M	E1S K1U
1009	AJ	16	B	TWDX	READ TAPE	4	4763	B	-4W
1010	AJ	17	B	TWDX	WRITE TAPE	4	4767	B	-7Z
1011	AJ	18	BER	TYPI	CK FOR TAPE ERR	5	4771	B	Q5Y L
1012	AJ	19			ERR TYPE HERE				
1013	AJ	20			WILL NORMALLY				
1014	AJ	21			IND TP WR ERROR				
1015	AJ	22			THIS WILL BE TP				
1016	AJ	23			RD ERR IF WRITE				
1017	AJ	24			TP IS NOT AVAIL				
1018	AJ	25	B	CKTR	CK READ	4	4776	B	K3/
1019	AJ	26	B	TYPI-031	INCORRECT READ	4	4780	B	Q2X
1020	AJ	27	B	CKTW	CK WRITE	4	4784	B	J7Z
1021	AJ	28	B	TYPI-031	REC WRITTEN DOES	4	4788	B	Q2X
1022	AJ	29			NOT COMPARE				
1023	AJ	30	B	UPX1	UP XR 1	4	4792	B	Z8W
1024	AJ	31	B	TRTW	EXECUTE AGAIN	4	4796	B	76T
1025	AJ	32	B	LOOPCK	CK FOR LOOP	4	4800	B	U39
1026	AJ	33							
1027	AJ	34							
1028	AJ	35							
1029	AJ	36							
1030	AJ	37							
1031	AJ	38							

ROUTINE NO. 29
TEST OVERLAP TAPE READ
FOLLOWED BY OVERLAP CARD READ

1410/7010-1401 TOPSY COMPATIBILITY TEST

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SEQ PG	LI'N	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1032	AJ 39		NOP	*E005				
1033	AJ 40		SAR	POST			4 4804	N 815
1034	AJ 41		LCA	ZZZ,0089			4 4808	Q Z04
1035	AJ 42		MCW	TPRINA,GORT006			7 4812	L B4W 089
1036	AJ 43	TRCR	B	TROX			7 4819	M E04 -5Y
1037	AJ 44		B	CROX			4 4826	B -4W
1038	AJ 45		BER	TYPI			4 4830	B J15
1039	AJ 46		8IN	TYPI,6			5 4834	B Q5Y L
1040	AJ 47		B	CKCR			5 4839	B Q5Y L
1041	AJ 48		B	TYPI-031			4 4844	B K74
1042	AJ 49		B	UPX1			4 4848	B Q2X
1043	AJ 50		B	TRCR			4 4852	B Z8W
1044	AJ 51		B	LOOPCK			4 4856	B 82W
1045	AJ 52						4 4860	B U39
1046	AJ 53							
1047	AJ 54							
1048	AJ 55							
1049	AJ 56							
1050	AJ 57							
1051	AJ 58							
1052	AJ 59							
1053	AJ 60							
1054	AJ 61							
1055	AJ 62	TRPC	B	TROX			4 4864	N 875
1056	AJ 63		B	PCOX			4 4868	Q Z04
1057	AJ 64		BER	TYPI			7 4872	L B4W 089
1058	AJ 65		B	CKTR			7 4879	M E01 -6Y
1059	AJ 66		B	TYPI-031			7 4886	M E1Y K54
1060	AJ 67		B	UPX1			4 4893	B -4W
1061	AJ 68		B	TRPC			4 4897	B J3V
1062	AJ 69		B	LOOPCK			5 4901	B Q5Y L
1063	AJ 70						4 4906	B K3/
1064	AJ 71						4 4910	B Q2X
1065	AJ 72						4 4914	B Z8W
1066	AJ 73						4 4918	B 89T
1067	AJ 74						4 4922	B U39
1068	AJ 75							
1069	AJ 76							
1070	AJ 77							
1071	AJ 78							
1072	AJ 79							
1073	AJ 80							
1074	AJ 81							
1075	AJ 82							
1076	AJ 83	NUMC1	MCW	CC1,GORT006			4 4926	N 93U
1077	AJ 84		MCW	CC2,GOCKTRE003			4 4930	Q Z04
1078	AJ 85	TRPF	B	TROX			7 4934	L 84W 089
1079	AJ 86		B	PFOX			8 4941	B 96X T06 N
1080	AJ 87		BER	TYPI			7 4949	M E0W -6Y
1081	AJ 88		B	CKTR			7 4956	M E2/ K54
							4 4963	B 98/
							7 4967	M E02 -6Y
							7 4974	M E15 K54
							4 4981	B -4W
							4 4985	B J5Y
							5 4989	B Q5Y L
							4 4994	B K3/

ROUTINE NO. 30
TEST OVERLAP TAPE READ
FOLLOWED BY OVERLAP CARD PUNCHROUTINE NO. 31
TEST OVERLAP TAPE READ
FOLLOWED BY PRINT

1410/7010-1401 IDPSY COMPATIBILITY TEST

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SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP DPERANDS

1082	AJ	89	B	TYPI-031	INCORRECT TP RD	4	4998	B	Q2X
1083	AJ	90	B	UPX1	UP XR 1	4	5002	B	Z8W
1084	AJ	91	B	TRPF	EXECUTE AGAIN	4	5006	B	98/
1085	AJ	92	B	LOOPCK	CK FDR LDDP	4	5010	B	U39
1086	AJ	93							
1087	AJ	94							
1088	AJ	95							
1089	AJ	96							
1090	AJ	97							
1091	AJ	98							
1092	AJ	99							
1093	AK	00							
1094	AK	01							
1095	AK	02							
1096	AK	03							
1097	AK	04							
1098	AK	05							
1099	AK	06							
1100	AK	07							
1101	AK	08							
1102	AK	09							
1103	AK	10							
1104	AK	11							
1105	AK	12							
1106	AK	13							
1107	AK	14							
1108	AK	15							
1109	AK	16							
1110	AK	17							
1111	AK	18							
1112	AK	19							
1113	AK	20							
1114	AK	21							
1115	AK	22							
1116	AK	23							
1117	AK	24							
1118	AK	25							
1119	AK	26							
1120	AK	27							
1121	AK	28							
1122	AK	29							
1123	AK	30							
1124	AK	31							
1125	AK	32							
1126	AK	33							
1127	AK	34							
1128	AK	35							
1129	AK	36							
1130	AK	37							
1131	AK	38							

ROUTINE NO. 32
TEST DVERLAP TAPE READ
FOLLOWED BY OVERLAP TAPE READ

1093	AK	00	NOP	*E005	SET ROUT. START	4	5014	N	#2S
1094	AK	01	SAR	PDST	ADDR IN Z02-Z04	4	5018	Q	Z04
1095	AK	02	LCA	ZZZ,0089	RESET XR 1	7	5022	L	B4W 089
1096	AK	03	MCW	CC1,GORT006	ALTER TP RD INST	7	5029	M	E0Z -6Y
1097	AK	04	MCW	CC2,GCKTR003	ALTER CK INSTR	7	5036	M	E1S K5+
1098	AK	05	B	TROX	READ TAPE	4	5043	B	-4W
1099	AK	06	B	TROX	READ TAPE	4	5047	B	-4W
1100	AK	07	BER	TYPI	RD ERR ON 2ND RD	5	5051	B	Q5Y L
1101	AK	08	B	CKTR	CK READ	4	5056	B	K3/
1102	AK	09	B	TYPI-031	INCORRECT READ	4	5060	B	Q2X
1103	AK	10			ON 2ND TAPE READ				
1104	AK	11	B	UPX1	UP XR 1	4	5064	B	Z8W
1105	AK	12	B	TRTR	EXECUTE AGAIN	4	5068	B	#4T
1106	AK	13	B	LOOPCK	CK FDR LDDP	4	5072	B	U39

ROUTINE NO. 33
TEST DVERLAP CARD READ
FOLLOWED BY OVERLAP TAPE WRITE

1113	AK	20	NOP	*E005	SET ROUT. START	4	5076	N	#8U
1114	AK	21	SAR	PDST	ADDR IN Z02-Z04	4	5080	Q	Z04
1115	AK	22	MCW	TPRINA,GDUTE006	ALTER TP WR INST	7	5084	M	E0+ J0/
1116	AK	23	MCW	TPDTA,GDCKTW019	ALTER CK INSTR	7	5091	M	E1V K1U
1117	AK	24	LCA	ZZZ,0089	RESET XR 1	7	5098	L	B4W 089
1118	AK	25	B	CROX	READ CARD	4	5105	B	J1S
1119	AK	26	B	TWOX	WRITE TAPE	4	5109	B	-7Z
1120	AK	27	B	TYPI,E	CD READ ERRDR	5	5113	B	Q5Y E
1121	AK	28	BER	TYPI	TP WRITE ERROR	5	5118	B	Q5Y L
1122	AK	29	B	CKCR	CK CD READ	4	5123	B	K7+
1123	AK	30	B	TYPI-031	INCORRECT CD RD	4	5127	B	Q2X
1124	AK	31	B	CKTW	CK TP WRITE	4	5131	B	J7Z
1125	AK	32	B	TYPI-031	REC WRITTEN DDES	4	5135	B	Q2X
1126	AK	33			NOT COMPARE				
1127	AK	34	B	UPX1	UP XR 1	4	5139	B	Z8W
1128	AK	35	B	CKTW	EXECUTE AGAIN	4	5143	B	/OV
1129	AK	36	B	LOOPCK	CK FOR LOOP	4	5147	B	U39

ROUTINE NO. 34

SFX CT LOCN INSTRUCTION

OPERANDS

LABEL OP

SEQ PG LIN

TEST OVERLAP CARD READ
FOLLOWED BY OVERLAP TAPE READ

1132	AK 39	NOP	*E005	SET ROUT. START	4	5151	N 5Z
1133	AK 40	SAR	POST	ADDR IN Z02-Z04	4	5155	Q Z04
1134	AK 41	LCA	ZZZ,0089	RESET XR 1	7	5159	L B4W 089
1135	AK 42	MCW	TPRINA,GDRTE006	ALTER TP RD INSTR	7	5166	M C0+ -6Y
1136	AK 43	MCW	TPDTA,GDCKTRE003	ALTER CK INSTR	7	5173	M C1V K5+
1137	AK 44	B	CROX	READ CARD	4	5180	B J15
1138	AK 45	B	TROX	READ TAPE	4	5184	B -4W
1139	AK 46	B	TYPI,E	CD READ ERROR	5	5188	B Q5Y E
1140	AK 47	CRTR	TYPI	TP READ ERROR	5	5193	B Q5Y L
1141	AK 48	B	CKTR	CK TP READ	4	5198	B K3V
1142	AK 49	B	TYPI-031	INCORRECT TP RD	4	5202	B Q2X
1143	AK 50	B	UPXI	UP XR 1	4	5206	B ZEM
1144	AK 51	B	CRTR	EXECUTE AGAIN	4	5210	B 78+
1145	AK 52	B	LOOPCK	CK FOR LOOP	4	5214	B J39
1146	AK 53						
1147	AK 54						
1148	AK 55						
1149	AK 56						
1150	AK 57						
1151	AK 58						
1152	AK 59						
1153	AK 60						
1154	AK 61						
1155	AK 62						
1156	AK 63						
1157	AK 64						
1158	AK 65						
1159	AK 66						
1160	AK 67						
1161	AK 68						
1162	AK 69						
1163	AK 70						
1164	AK 71						
1165	AK 72						
1166	AK 73						
1167	AK 74						
1168	AK 75						
1169	AK 76						
1170	AK 77						
1171	AK 78						
1172	AK 79						
1173	AK 80						
1174	AK 81						
1175	AK 82						
1176	AK 83						
1177	AK 84						
1178	AK 85						
1179	AK 86						
1180	AK 87						
1181	AK 88						

ROUTINE NO. 35
TEST OVERLAP CARD READ
FOLLOWED BY OVERLAP CARD PUNCH

1154	AK 61	NOP	*E005	SET ROUT. START	4	5218	N 52W
1155	AK 62	SAR	POST	ADDR IN Z02-Z04	4	5222	Q Z04
1156	AK 63	LCA	ZZZ,0089	RESET XR 1	7	5226	L B4W 089
1157	AK 64	B	CROX	READ CARD	4	5233	B J15
1158	AK 65	B	PCOX	PUNCH CARD	4	5237	B J3V
1159	AK 66	B	TYPI,E	CD READ ERR	5	5241	B Q5Y E
1160	AK 67	B	TYPI,-	PO	5	5246	B Q5Y -
1161	AK 68	B	TYPI,-	PUNCH ERROR	5	5251	B Q5Y -
1162	AK 69	B	CKCR	CK READ	4	5256	B K7+
1163	AK 70	B	TYPI-031	INCORRECT CD RD	4	5260	B Q2X
1164	AK 71	B	UPXI	UP XR 1	4	5264	B Z8W
1165	AK 72	B	CRPC	EXECUTE AGAIN	4	5268	B S3T
1166	AK 73	B	LOOPCK	CK FOR LOOP	4	5272	B J39
1167	AK 74						
1168	AK 75						
1169	AK 76						
1170	AK 77						
1171	AK 78						
1172	AK 79						
1173	AK 80						
1174	AK 81						
1175	AK 82						
1176	AK 83						
1177	AK 84						
1178	AK 85						
1179	AK 86						
1180	AK 87						
1181	AK 88						

ROUTINE NO. 36
TEST OVERLAP CARD READ
FOLLOWED BY PRINT

1174	AK 81	NOP	*E005	SET ROUT. START	4	5276	N S8U
1175	AK 82	SAR	POST	ADDR IN Z02-Z04	4	5280	Q Z04
1176	AK 83	LCA	ZZZ,0089	RESET XR 1	7	5284	L B4W 089
1177	AK 84	B	CROX	READ CARD	4	5291	B J15
1178	AK 85	B	PFOX	PRINT	4	5295	B J5Y
1179	AK 86	B	TYPI,E	CD RD ERROR	5	5299	B Q5Y E
1180	AK 87	B	TYPI,+	PRINT ERROR	5	5304	B Q5Y +
1181	AK 88	B	CKCR	CK CD READ	4	5309	B K7+

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SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1182	AK	89		B	TYPI-031				
1183	AK	90		B	UPX1			5313	8 Q2X
1184	AK	91		B	CRPF			5317	8 Z8W
1185	AK	92		B	LOOPCK			5321	8 S9/
1186	AK	93		B				5325	8 U39
1187	AK	94							
1188	AK	95							
1189	AK	96							
1190	AK	97							
1191	AK	98							
1192	AK	99		NOP	*6005			5329	N 13X
1193	AL	00		SAR	POST			5333	Q 204
1194	AL	01		LCA	222,0089			5337	L 84W 089
1195	AL	02	CRCR	B	CROX			5344	8 J1S
1196	AL	03		B	CROX			5348	8 J1S
1197	AL	04		BIN	TYPI,6			5352	8 Q5Y 6
1198	AL	05		B	CKCR			5357	8 K74
1199	AL	06		B	TYPI-031			5361	8 Q2X
1200	AL	07							
1201	AL	08		B	UPX1			5365	8 Z8W
1202	AL	09		B	CRCR			5369	8 T4U
1203	AL	10		B	LOOPCK			5373	8 U39
1204	AL	11							
1205	AL	12							
1206	AL	13							
1207	AL	14							
1208	AL	15							
1209	AL	16							
1210	AL	17		NOP	*6005			5377	N 18V
1211	AL	18		SAR	POST			5381	Q 204
1212	AL	19		LCA	222,0089			5385	L 84W 089
1213	AL	20		MCW	TPOT8,GCKKTW019			5392	M 61Y K1U
1214	AL	21		MCW	TPRINB,GOUT006			5399	M 60T J0/
1215	AL	22	PCTW	B	PCOX			5406	B J3V
1216	AL	23		B	TWOX			5410	B -7Z
1217	AL	24		BIN	TYPI,-			5414	B Q5Y -
1218	AL	25		BER	TYPI			5419	B Q5Y L
1219	AL	26		B	CKTW			5424	8 J7Z
1220	AL	27		B	TYPI-031			5428	8 Q2X
1221	AL	28							
1222	AL	29		B	UPX1			5432	8 Z8W
1223	AL	30		B	PCTW			5436	8 U0W
1224	AL	31		B	LOOPCK			5440	8 U39
1225	AL	32							
1226	AL	33							
1227	AL	34							
1228	AL	35							
1229	AL	36							
1230	AL	37							
1231	AL	38		NOP	*6005			5444	N U5S

1410/7010-1401 TOPSY COMPATIBILITY TEST

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SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

1232	AL	39	SAR	POST	ADDR IN Z02-Z04	4	5448	Q	Z04
1233	AL	40	LCA	ZZZ,0089	RESET XR 1	7	5452	L	B4W 089
1234	AL	41	MCW	TPRINB,GORTE006	ALTER TP RD INST	7	5459	M	E0T -6Y
1235	AL	42	MCW	TPOTB,GOCKTR003	ALTER CK INSTR	7	5466	M	E1Y <5*
1236	AL	43	B	PCOX	PUNCH CARD	4	5473	B	J3V
1237	AL	44	B	TROX	READ TAPE	4	5477	B	-4W
1238	AL	45	BIN	TYPI,-	PUNCH ERROR	5	5481	B	Q5Y -
1239	AL	46	BER	TYPI	TAPE READ ERROR	5	5486	B	Q5Y L
1240	AL	47	B	CKTR	CK TP READ	4	5491	B	K3/
1241	AL	48	B	TYPI-031	INCORRECT TP RD	4	5495	B	Q2X
1242	AL	49	B	UPX1	UP XR 1	4	5499	B	Z8W
1243	AL	50	B	PCTR	EXECUTE AGAIN	4	5503	B	U7T
1244	AL	51	B	LOOPCK	CK FOR LOOP	4	5507	B	U39

ROUTINE NO. 40
TEST OVERLAP CARD PUNCH
FOLLOWED BY OVERLAP CARD READ

1251	AL	58	NOP	*E005	SET ROUT. START	4	5511	N	V1Z
1252	AL	59	SAR	POST	ADDR IN Z02-Z04	4	5515	Q	Z04
1253	AL	60	LCA	ZZZ,0089	RESET XR 1	7	5519	L	B4W 089
1254	AL	61	B	PCOX	PUNCH CARD	4	5526	B	J3V
1255	AL	62	B	CROX	READ CARD	4	5530	B	J1S
1256	AL	63	BIN	TYPI,-	PUNCH ERROR	5	5534	B	Q5Y -
1257	AL	64	BIN	TYPI,ε	CD READ ERROR	5	5539	B	Q5Y ε
1258	AL	65	B	CKCR	CK CD READ	4	5544	B	K7*
1259	AL	66	B	TYPI-031	INCORRECT CD RD	4	5548	B	Q2X
1260	AL	67	B	UPX1	UP XR 1	4	5552	B	Z8W
1261	AL	68	B	PCCR	EXECUTE AGAIN	4	5556	B	V2W
1262	AL	69	B	LOOPCK	CK FOR LOOP	4	5560	B	U39

ROUTINE NO. 41
TEST OVERLAP CARD PUNCH
FOLLOWED BY PRINT

1269	AL	76	NOP	*E005	SET ROUT. START	4	5564	N	V7S
1270	AL	77	SAR	POST	ADDR IN Z02-Z04	4	5568	Q	Z04
1271	AL	78	LCA	ZZZ,0089	RESET XR 1	7	5572	L	B4W 089
1272	AL	79	B	PCOX	PUNCH CARD	4	5579	B	J3V
1273	AL	80	B	PFOX	PRINT	4	5583	B	J5Y
1274	AL	81	BIN	TYPI,-	PUNCH ERROR	5	5587	B	Q5Y -
1275	AL	82	BIN	TYPI,*	PRINT ERROR	5	5592	B	Q5Y *
1276	AL	83	B	UPX1	UP XR 1	4	5597	B	Z8W
1277	AL	84	B	PCPF	EXECUTE AGAIN	4	5601	B	V7Z
1278	AL	85	B	LOOPCK	CK FOR LOOP	4	5605	B	U39

ROUTINE NO. 42

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1282	AL	89							
1283	AL	90							
1284	AL	91							
1285	AL	92		NCP	*E005				
1286	AL	93		SAR	POST				
1287	AL	94		LCA	ZZZ,0089				
1288	AL	95	PCPC	B	PCOX				
1289	AL	96		B	PCOX				
1290	AL	97		8IN	TYP1,-				
1291	AL	98		8	UPX1				
1292	AL	99		B	PCPC				
1293	AM	00		B	LOOPCK				
TEST OVERLAP CARD PUNCH FOLLOWED BY OVERLAP CARD PUNCH									
					SET ROUT.				
					ADDR IN Z02-Z04				
					RESET XR 1				
					PUNCH CARO				
					PUNCH CARO				
					PUN ERR-2ND CO				
					UP XR 1				
					EXECUTE AGAIN				
					CK FOR LOOP				

ROUTINE NO. 43
TEST PRINT
FOLLOWED BY OVERLAP TAPE WRITE

NCP	TIME	MSG	STATUS	DATA	TIME	MSG	STATUS	DATA
NCP	1300 AM 07	*E005			4	5649	V	W5X
SAR	1301 AM 08	POST			4	5653	Q	Z04
LCA	1302 AM 09	ZZZ,0089			7	5657	L	B4W
MCW	1303 AM 10	TYPRNC,GOUTE006,			7	5664	V	E0W
MCW	1304 AM 11	IPOIC,GOCKTWE019			7	5671	M	E2/
	1305 AM 12	PFOX			4	5678	B	J5Y
	1306 AM 13	TWOX			4	5682	B	-7Z
	1307 AM 14	TYPI,*			5	5686	B	Q5Y
	1308 AM 15	TYPI			5	5691	B	Q5Y
	1309 AM 16	CTM			4	5696	B	J7Z
	1310 AM 17	TYPI-031			4	5700	B	Q2X
	1311 AM 18							
	1312 AM 19	UPX1			4	5704	B	Z8W
	1313 AM 20	PFTW			4	5708	B	W7Y
	1314 AM 21	LOOPCK			4	5712	B	U39

SEQ PG LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1332 AM 39		BIN	TYPI,*				
1333 AM 40		8ER	TYPI	5	5779	B Q5Y #	PRINT ERROR
1334 AM 41		8	CKTR	5	5784	B Q5Y L	TP READ ERROR
1335 AM 42		8	TYPI-031	4	5789	8 K3/	CK TAPE READ
1336 AM 43		8	UPXI	4	5793	8 Q2X	INCORRECT TP RD
1337 AM 44		8	PFTR	4	5797	8 Z8W	UP XR 1
1338 AM 45		8	LOOPCK	4	5801	8 X7/	EXECUTE AGAIN
1339 AM 46				4	5805	8 U39	CK FOR LOOP
1340 AM 47							
1341 AM 48							
1342 AM 49							
1343 AM 50							
1344 AM 51							
1345 AM 52		NOP	*E005	4	5809	N YIX	SET ROUT. START
1346 AM 53		SAR	POST	4	5813	Q Z04	ADDR IN Z02-Z04
1347 AM 54		LCA	ZZZ,0089	7	5817	L 84W 089	RESET XR 1
1348 AM 55	PFCR	8	PFOX	4	5824	8 J5Y	PRINT
1349 AM 56		8	CROX	4	5828	8 J1S	READ CARD
1350 AM 57		BIN	TYPI,*	4	5832	8 Q5Y #	PUNCH ERROR
1351 AM 58		BIN	TYPI,*	5	5837	8 Q5Y #	CD RD ERROR
1352 AM 59		8	CKCR	4	5842	8 K7#	CK CD READ
1353 AM 60		8	TYPI-031	4	5846	8 Q2X	INCORRECT CD RD
1354 AM 61		8	UPXI	4	5850	8 Z8W	UP XR 1
1355 AM 62		8	PFCR	4	5854	8 Y2U	EXECUTE AGAIN
1356 AM 63		8	LOOPCK	4	5858	8 U39	CK FOR LOOP
1357 AM 64							
1358 AM 65							
1359 AM 66							
1360 AM 67							
1361 AM 68							
1362 AM 69		NOP	*E005	4	5862	N Y7#	SET ROUT. START
1363 AM 70		SAR	POST	4	5866	Q Z04	ADDR IN Z02-Z04
1364 AM 71		LCA	ZZZ,0089	7	5870	L 84W 089	RESET XR 1
1365 AM 72		8	PFOX	4	5877	8 J5Y	PRINT
1366 AM 73	PFFC	8	PCOX	4	5881	8 J3V	PUNCH
1367 AM 74		8IN	TYPI,*	5	5885	8 Q5Y #	PRINT ERROR
1368 AM 75		BIN	TYPI,*	5	5890	8 Q5Y -	PUNCH ERROR
1369 AM 76		8	UPXI	4	5895	8 Z8W	UP XR 1
1370 AM 77		8	PFFC	4	5899	8 Y7X	EXECUTE AGAIN
1371 AM 78		SS		2	5903	K .	
1372 AM 79		8	LOOPCK	4	5905	8 U39	CK FOR LOOP
1373 AM 80							
1374 AM 81							
1375 AM 82							
1376 AM 83							
1377 AM 84							
1378 AM 85							
1379 AM 86							
1380 AM 87							
1381 AM 88		MCW	*T0,PAS-003,W	8	5909	M ZT0 E4V W	TYPE PASS

ROUTINE NO. 45
TEST PRINT
FOLLOWED BY OVERLAP CARD READ

ROUTINE NO. 46
TEST PRINT
FOLLOWED BY OVERLAP CARD PUNCH

ROUTINE TO TYPE PASS AND TEST
TAD3 FOR REPEAT IF TAD3 IS 1
HALT BEFORE RETURNING TO ROUTINE 1
IF 0 TYPE COMP SW MESSAGE AND
HALT BEFORE CALLING IN NEXT PROGRAM

1410/7010-1401 TOPSY COMPATIBILITY TEST

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SEQ PG LIN	LABEL	OP	OPERANDS	SFX CT	LUCY	INSTRUCTION
1382 AM 89		BCE	REPEAT,TAD3,1	8	5917	B Z55 #03 1
1383 AM 90		LCA	BIGM,0007	7	5925	L Z57 007
1384 AM 91		SW	0008	4	5932	P 008
1385 AM 92		MCW	XTO,MD1410-031,M	8	5936	M XTO ES#
1386 AM 93		H		1	5944	.
1387 AM 94						
1388 AM 95	BIGM	DCW	2J00400 2	7	5951	
1389 AM 96	REPEAT	NOP	2008	4	5952	N -08
1390 AM 97		SAR	POST	4	5956	Q Z04
1391 AM 98		H		1	5960	.
1392 AM 99						
1393 AM 00						
1394 AM 01						

TEST FOR REPEAT
TYPE MESSAGE
HALT TO SET COMP
SW TO 1410/7010
SET FOR
RESTART
HALT PRESS COMP
RESET AND START
FOR NEXT PASS

SEQ PG LIN	LABEL	OP	OPERANOS	SFX CT	LOCN	INSTRUCTION
1395 AN 03		JCH	1410/7010-1401 TOPSY COMPATIBILITY TEST			
1396 AN 05	CKBUSY	SBR	CYCLEX0003	4	5961	H 28S
1397 AN 06	A		ONE,CYCNT	7	5965	A ALU 83Z
1398 AN 07	MA		8KCYC,CYCLEX0003	7	5972	# 28V 28S
1399 AN 08	CYCLEX B		0000	4	5979	B 000
1400 AN 09	8KCYC	OCW	019E0	3	5985	
1401 AN 10						
1402 AN 11	UPX1	SBR	UPXEX0003	4	5986	H -1Z
1403 AN 12	A		ONE,0089	7	5990	A ALJ 089
1404 AN 13	C		0089,225	7	5997	C 089 82V
1405 AN 14	BU		UPXEX	5	6004	B -1W /
1406 AN 15	MA		224,UPXEX0003	7	6009	# 84Z -1Z
1407 AN 16	UPXEX B		0000	4	6016	B 000
1408 AN 17						
1409 AN 18	EOFF	SBR	EOFFEX0003	4	6020	H -3S
1410 AN 19	CU		001,R	5	6024	U 001 R
1411 AN 20	EOFFEX B		0000	4	6029	B 000
1412 AN 21						
1413 AN 22	EORR	SBR	EORREX0003	4	6033	H -4V
1414 AN 23	CU		002,R	5	6037	U 002 R
1415 AN 24	EORREX B		0000	4	6042	B 000
1416 AN 25						
1417 AN 26	TROX	SBR	TROEX0003	4	6046	H -7V
1418 AN 27	BCE		GORT,1291,1	8	6050	B -6S 591 1
1419 AN 28	B		TROEX	4	6058	B -7V
1420 AN 29	GORT	MCW	\$\$,WKAREA,R	8	6062	M @U1 H0# R
1421 AN 30	BEF		EOFF	5	6070	B -2# K
1422 AN 31	TROEX B		0000	4	6075	B 000
1423 AN 32						
1424 AN 33						
1425 AN 34	TWOX	SBR	TWOEX0003	4	6079	H J1/
1426 AN 35	BCE		GOUT,1292,1	8	6083	B -9V 592 1
1427 AN 36	B		TWOEX	4	6091	B JOY
1428 AN 37	GOUT	MCW	\$\$,WKAREA,W	8	6095	M @U2 H0# W
1429 AN 38	BEF		EORR	5	6103	B -3T K
1430 AN 39	TWOEX B		0000	4	6108	B 000
1431 AN 40						
1432 AN 41						
1433 AN 42	CROX	SBR	CROEX0003	4	6112	H J3U
1434 AN 43	BCE		GORC,1301,R	8	6116	B J2V T01 R
1435 AN 44	B		CROEX	4	6124	B J3/
1436 AN 45	GORC	SS	P	2	6128	K P
1437 AN 46	R			1	6130	1
1438 AN 47	CROEX B		0000	4	6131	B 000
1439 AN 48						
1440 AN 49						
1441 AN 50	PCOX	SBR	PCOEX0003	4	6135	H J5X
1442 AN 51	BCE		GOPC,1303,P	8	6139	B J5/ T03 P
1443 AN 52	B		PCOEX	4	6147	B J5U
1444 AN 53						

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SEQ PG LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1445 AN 54	GOPC	SS					
1446 AN 55		P					
1447 AN 56	PCOEX	B	0000	2	6151	K	
1448 AN 57				1	6153	4	
1449 AN 58				4	6154	B 000	
1450 AN 59	PFOX	SBR	PFOEX&003				
1451 AN 60		BCE	GOPF,1305,P	4	6158	H J7Y	
1452 AN 61		B	PFOEX	8	6162	B J7U T05 P	
1453 AN 62	GOPF	W		4	6170	B J7V	
1454 AN 63	PFOEX	B	0000	1	6174	2	
1455 AN 64				4	6175	B 000	
1456 AN 65							
1457 AN 66	CKTW	SBR	CKTWEX&003	4	6179	H K3#	
1458 AN 67		BCE	GCKTW,1292,1	8	6183	B J9V S92 1	
1459 AN 68		B	CKTWEX-007	4	6191	B K2#	
1460 AN 69	GCKTW	CU	XU2,8	5	6195	U XU2 B	
1461 AN 70		MCH	XU2,WKAREA&100,R	8	6200	M XU2 I0# R	
1462 AN 71		C	WKAREA&179,WKAREA&079	7	6208	C I7Z H7Z	
1463 AN 72		BU	CKTWEX	5	6215	B K2X /	
1464 AN 73		MA	ZZ4,CKTWEX&003	7	6220	# 84Z K3#	
1465 AN 74	CKTWEX	B	0000	4	6227	B 000	
1466 AN 75	CKTR	SBR	CKTREW&003	4	6231	H K6Z	
1467 AN 76		BCE	GCKTR,1291,1	8	6235	B K4X S91 1	
1468 AN 77		B	CKTREW-007	4	6243	B K5Z	
1469 AN 78	GCKTR	C	WKAREA&079,RDCOMP&003	7	6247	C H7Z C4Z	
1470 AN 79		BU	CKTREW	5	6254	B K6W /	
1471 AN 80		MA	ZZ4,CKTREW&003	7	6259	# 84Z K6Z	
1472 AN 81	CKTREW	B	0000	4	6266	B 000	
1473 AN 82							
1474 AN 83							
1475 AN 84	CKCR	SBR	CKCREX&003	4	6270	H LOY	
1476 AN 85		BCE	GCKCR,1301,R	8	6274	B K8W T01 R	
1477 AN 86		B	CKCREX-007	4	6282	B K9Y	
1478 AN 87	GCKCR	C	0080,RDCOMP&003	7	6286	C 080 C4Z	
1479 AN 88		BU	CKCREX	5	6293	B LOV /	
1480 AN 89		MA	ZZ4,CKCREX&003	7	6298	# 84Z LOY	
1481 AN 90	CKCREX	B	0000	4	6305	B 000	
1482 AN 91							
1483 AN 92							
1484 AN 93							
1485 AN 94							
1486 AN 95							
1487 AN 96							
1488 AN 97							
1489 AN 98	PRETPI	SBR	PRETEX&003	4	6309	H M3X	
1490 AN 99		NOP	*&005	4	6313	N L2/	
1491 AD 00		SAR	0084	4	6317	Q 084	
1492 AD 01		LCA	ZZZ,0089	7	6321	L B4W 089	
1493 AD 02		CU	XU1,R	5	6328	U XU1 R	
1494 AD 03	NXA	CS	WKAREA&019	4	6333	/ H1Z	

ROUTINE TO WRITE TAPE 1
FOR USE AS INPUT WITH TEST
ROUTINES CALLING FOR TAPE INPUT

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1495	AD	04		SW	WKAREA				
1496	AD	05		MCW	RDCOMP-071EX1,WKAREA019				SET WM
1497	AD	06		MCW	WKAREA019,WKAREA018				SET RECORD
1498	AD	07		LCA	GMWM,WKAREA020				FOR WRITING
1499	AD	08		B	WTAPA				LOAD GM WM
1500	AD	09		CU	ZUL,B				GO TO WRITE TAPE
1501	AD	10		CU	ZUL,E				BACKSPACE
1502	AD	11		MCW	ZUL,WKAREA,W				& SKIP
1503	AD	12		NOP	0000				WRITE RECORD
1504	AD	13		BEF	ENREEL				EXTRA INSTR
1505	AD	14		8ER	TPWRER				CK FOR ERR
1506	AD	15							CK FOR WRITE ERR
1507	AD	16							ERR TYPE HERE
1508	AD	17							INDS THAT IO
1509	AD	18							TRYS USING BKSP-
1510	AD	19							SKIP HAVE BEEN
1511	AD	20							MADE TO WR REC
1512	AD	21							RESET ERR CNTR
1513	AD	22							UP XR 1
1514	AD	23							CK FOR 25 RECS
1515	AD	24							WR NEXT REC
1516	AD	25							WRITE ECF
1517	AD	26							REWIND TAPE
1518	AD	27							ROUTINE EXIT
1519	AD	28							
1520	AD	29							
1521	AD	30							
1522	AD	31							
1523	AD	32							
1524	AD	33							
1525	AD	34							
1526	AD	35							
1527	AD	36							
1528	AD	37							
1529	AD	38							
1530	AD	39							
1531	AD	40							
1532	AD	41							
1533	AD	42							
1534	AD	43							
1535	AD	44							
1536	AD	45							
1537	AD	46							
1538	AD	47							
1539	AD	48							
1540	AD	49							
1541	AD	50							
1542	AD	51							
1543	AD	52							
1544	AD	53							

TAPE WRITE ERROR ROUTINE
THIS ROUTINE IS ENTERED WHENEVER
A TAPE WRITE ERROR IS
ENCOUNTERED WITHIN TEST ROUTINE

1525	AD	34		SBR	TWREX003				SET EXIT AND
1526	AD	35		SBR	REDA003				REDUCE INSTR
1527	AD	36		LCA	BRANCH,MODIFY				SET SW TO 8R
1528	AD	37		8	*0009				
1529	AD	38		SBR	TWREX003				SET ROUTINE EXIT
1530	AD	39		SBR	REDA003				SET REDUCE INSTR
1531	AD	40		BIN	ALTER,Q				CK FOR INQUIRY
1532	AD	41		A	ONE,TWRCNT				ADD 1
1533	AD	42		A	ONE,WRCNT				TO ERROR CNTRS
1534	AD	43		C	WRCNT,TEN				CK FOR 10 TRYS
1535	AD	44		BU	MODIFY				NOT 10 TRY AGAIN
1536	AD	45		LCA	ZUL,WRCNT				RESET ERR CNTR
1537	AD	46		BCE	MODIFY,TADD,1				BYPASS ERR IND
1538	AD	47		SW	0000				REDUCE
1539	AD	48		CH					ADDRESS
1540	AD	49		CH					AND
1541	AD	50		CH					STORE
1542	AD	51		CH					IN
1543	AD	52		SAR	ERRLO				ERRLO
1544	AD	53		MCW	ZTO,ERRLO-012,W				TYPE ERR LOC

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SEQ	PG	LN	LABEL	DP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1545	AD	54		BCE	ERHA,TAD2,1	8	6531	8	N4T #02 1
1546	AD	55		B	MODIFY	4	6539	8	N4U
1547	AD	56	ERHA	H		1	6543		
1548	AD	57	MODIFY	NOP	DVLPMD	4	6544	N	N5Z
1549	AD	58							
1550	AD	59							
1551	AD	60		MA	BK32,TWREX&003	7	6548	#	N7Z N7W
1552	AD	61		B	TWREX	4	6555	B	N7T
1553	AD	62	DVLPMD	LCA	NOP,MODIFY	7	6559	L	FLV N4U
1554	AD	63		MA	BK56,TWREX&003	7	6566	#	N8S N7W
1555	AD	64	TWREX	B	0000	4	6573	B	000
1556	AD	65							
1557	AD	66	BK32	DCW	216H2	3	6579		
1558	AD	67	BK56	DCW	214D2	3	6582		
1559	AD	68							
1560	AD	69							
1561	AD	70							
1562	AD	71							
1563	AD	72							
1564	AD	73							
1565	AD	74							
1566	AD	75		SBR	TRREX&003	4	6583	H	D9S
1567	AD	76		SBR	REDAD&003	4	6587	H	05Z
1568	AD	77		LCA	BRANCH,MODIF	7	6591	L	FLU D9T
1569	AD	78		B	*&D09	4	6598	B	01#
1570	AD	79	TPRDR	SBR	TRREX&003	4	6602	H	09S
1571	AD	80		SBR	REDAD&003	4	6606	H	05Z
1572	AD	81		BIN	ALTER,Q	5	6610	B	U68 Q
1573	AD	82		A	DNE,TRDCNT	7	6615	A	ALU F5T
1574	AD	83		A	DNE,RDCNT	7	6622	A	ALU E3Y
1575	AD	84		C	RDCNT,TEN	7	6629	C	E3Y F2/
1576	AD	85		BU	MODIF	5	6636	B	D9T /
1577	AD	86		LCA	ZZ,RDCNT	7	6641	L	E3U E3Y
1578	AD	87		BCE	TRREX,TADD,1	8	6648	B	D8Z #00 1
1579	AD	88	REDAD	SW	0000	4	6656		, 000
1580	AD	89		CW		1	6660		
1581	AD	90		CW		1	6661		
1582	AD	91		CW		1	6662		
1583	AD	92		CW		1	6663		
1584	AD	93		SAR	ERRL	4	6664	Q	F4Y
1585	AD	94		MCW	ZTO,ERRL-D12,W	8	6668	M	ZTO F3W W
1586	AD	95		BCE	ERH,TAD2,1	8	6676	B	D8Y #02 1
1587	AD	96		B	TRREX	4	6684	B	08Z
1588	AD	97	ERH	H	0000	1	6688		
1589	AD	98	TRREX	B		4	6689	B	000
1590	AD	99	MODIF	CU	ZU1,8	5	6693	U	ZU1 8
1591	AP	00		NDP	DVLPMD	4	6698	N	PLT
1592	AP	01							
1593	AP	02							
1594	AP	03		MA	BK26,TRREX&003	7	6702	#	F5W D9S

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1595	AP	04		B	TRRX				
1596	AP	05		LCA	NOPI,MODIF&005				
1597	AP	06	OVLPM	MA	BK50,TRRX&003				
1598	AP	07		B	TRRX				
1599	AP	08							GO TO EXIT
1600	AP	09						4 6709	8 08Z
1601	AP	10							
1602	AP	11						7 6713	L F1V 09Y
1603	AP	12						7 6720	# F5Z 09S
1604	AP	13						4 6727	8 08Z
1605	AP	14							
1606	AP	15							
1607	AP	16							
1608	AP	17							
1609	AP	18							
1610	AP	19							
1611	AP	20							
1612	AP	21							
1613	AP	22							
1614	AP	23							
1615	AP	24							
1616	AP	25							
1617	AP	26							
1618	AP	27							
1619	AP	28							
1620	AP	29							
1621	AP	30							
1622	AP	31							
1623	AP	32							
1624	AP	33							
1625	AP	34							
1626	AP	35							
1627	AP	36							
1628	AP	37							
1629	AP	38							
1630	AP	39							
1631	AP	40							
1632	AP	41							
1633	AP	42							
1634	AP	43							
1635	AP	44							
1636	AP	45							
1637	AP	46							
1638	AP	47							
1639	AP	48							
1640	AP	49							
1641	AP	50							
1642	AP	51							
1643	AP	52							
1644	AP	53							

GO TO EXIT
 SET SW TO NOP
 DEC ADDR BY 43
 GO TO EXIT

TAPE END OF REEL ROUTINE
 THIS ROUTINE IS ENTERED WHENEVER
 END OF REEL IS ENCOUNTERED
 DURING TAPE WRITE OPERATION

ENREEL SBR
 LCA
 MCM
 ENREX B

ENREX&003
 NOP,EOF SW
 XT0,REELN-010,W
 0000

SET ROUTINE EXIT
 SET EOF SW
 TYPE MESSAGE
 ROUTINE EXIT

4 6731 H P5T
 7 6735 L F1V P6S
 8 6742 M XT0 F6+ W
 4 6750 8 000

TAPE END OF FILE ROUTINE
 THIS ROUTINE IS ENTERED WHENEVER
 END OF REEL OR END OF FILE
 IS ENCOUNTERED DURING A
 TAPE READ OPERATION

EOF1 SBR
 SBR
 EOF SW B

EOFEX&003
 INDEF&003
 INDEF

SET ROUTINE EXIT
 SET REDUCE INSTR
 THIS WILL BE A
 BR TO IND ERR IF
 EOR WAS NOT
 ENCRD ON WRITE
 REWIND TAPE
 RESTORE SW
 RETRY ROUTINE
 BYPASS ERR IND
 REDUCE
 ADDRESS
 AND
 STORE
 IN
 EOFIN
 WRITE MESSAGE
 CK FOR ERR HALT
 GO TO EXIT
 ERROR HALT
 ROUTINE EXIT

4 6754 H Q2W
 4 6758 H P8V
 4 6762 8 P8S

XU1,R
 BRANCH,EOF SW
 0001
 EOFEX,TADO,1
 0000

CU
 LCA
 B
 INDEF BCE
 SW
 CM
 CM
 CM
 CM
 SAR
 MCM
 BCE
 B
 EOFH H
 EOFEX B

5 6766 U XU1 R
 7 6771 L F1U P6S
 4 6778 B 001
 8 6782 B Q2T +00 1
 4 6790 , 000
 1 6794
 1 6795
 1 6796
 1 6797
 4 6798 Q FBX
 8 6802 M XT0 F7S W
 8 6810 B Q2S +02 1
 4 6818 B Q2T
 1 6822
 4 6823 B 000

ERROR ROUTINE
 THIS ROUTINE IS ENTERED WHEN AN ERROR
 IS ENCOUNTERED WITHIN TEST ROUTINE
 TEST TADO
 IF 1 BYPASS ERR IND AND CK INQUIRY
 IF 0 TYPE ERROR ADDRESS AND TEST

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SFX CT LOCN INSTRUCTION

OPERANDS

LABEL OP

SEQ PG LIN

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1693	AQ	03							
1694	AQ	05	IPINS1	DCW	1410/7010-1401 TOPSY COMPATIBILITY TEST				
1695	AQ	06	IPINS2	DCW	2302	2	6995		
1696	AQ	07	IPRINA	DCW	2303	2	6997		
1697	AQ	08	IPRINB	DCW	20012	3	7000		
1698	AQ	09	IPRINC	DCW	21013	3	7003		
1699	AQ	10	CC1	DSA	22012	3	7006		
1700	AQ	11	CC2	DSA	23012	3	7009		H0+
1701	AQ	12	TPOTA	DSA	24012	3	7012		H72
1702	AQ	13	TPOTB	DSA	25012	3	7015		080
1703	AQ	14	TPOTC	DSA	26012	3	7018		180
1704	AQ	15	RESTA	8	27012	3	7021		280
1705	AQ	16		DC	1901	4	7022		B 201
1706	AQ	17	POST	EQU	28000	1	7026		
1707	AQ	18		EQU	1904		1904		
1708	AQ	18	1905	DCW	1905		1905		
1709	AQ	19	ZZ1	DCW	28000	5	1905		
1710	AQ	20	CHS	DCW	20012	3	7029		
1711	AQ	21	ZER3	DCW	28000	8	7037		
1712	AQ	22	CHTEST	DCW	20002	3	7040		
1713	AQ	23	TW0	DCW	28000	1	7041		
1714	AQ	24	Z10	DCW	28000	1	7042		
1715	AQ	25	TSBR	DCW	20102	3	7045		
1716	AQ	26	XXX	DCW	28000	3	7048		
1717	AQ	27	TSBRAM	DSA	28000	3	7051		
1718	AQ	28	PRTHAM	DCW	28000	32	7054		64Y
1719	AQ	29		DC	28000	6	7092		
1720	AQ	30	GMH	DCW	28000	1	7093		
1721	AQ	31	PRBMSG	DCW	201234567892	10	7103		
1722	AQ	32	IMSEG	DCW	28000	10	7113		
1723	AQ	33	ONE	DCW	28000	1	7114		
1724	AQ	34	FRTHOU	DCW	28000	3	7117		
1725	AQ	35	SAVA	DC	28000	5	7122		
1726	AQ	36	SVLOC	DSA	28000	3	7125		AIY
1727	AQ	37	RESCK	DCW	28000	32	7157		
1728	AQ	38		DC	28000	8	7165		
1729	AQ	39	RESHAM	DCW	28000	1	7166		
1730	AQ	40		DC	28000	32	7198		
1731	AQ	41		DC	28000	23	7221		
1732	AQ	42		DCW	28000	1	7222		
1733	AQ	43	ZZ5	DCW	28000	3	7225		
1734	AQ	44	PRBSEG	DCW	28000	10	7235		
1735	AQ	45	CYCNT	DCW	28000	4	7239		
1736	AQ	46	ZZZZ	DCW	28000	4	7243		
1737	AQ	47	ZZZ	DCW	28000	4	7246		
1738	AQ	48	ZZ4	DCW	28000	3	7249		
1739	AQ	49	AA1	DCW	28000	2	7251		
1740	AQ	50		DCW	28000	2	7253		
1741	AQ	51		DCW	28000	2	7255		
1742	AQ	52		DCW	28000	2	7257		

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SFX CT LCCN INSTRUCTION

OPERANDS

LABEL OP

SEQ PG LIN

1743	AQ 53	ADAN	DCW	2/02	2	7259	
1744	AQ 54		DCW	2/02	2	7261	
1745	AQ 55		DCW	2/02	2	7263	
1746	AQ 56		DCW	2/02	2	7265	
1747	AQ 57	ADAREA	DCW	2	2	7267	
1748	AQ 58	NINT9	DCW	2992	2	7269	
1749	AQ 59		DCW	28201	32	7301	
1750	AQ 60		DC	26789.0<333*14-/,8=1//22>76-+ A2	32	7333	
1751	AQ 61	RDCOMP	DC	2BCDEFHIJKLMN2	13	7346	
1752	AQ 62		DC	2OPQ2	3	7349	
1753	AQ 63		DCW	232	1	7350	
1754	AQ 64	PRDCMS	DCW	2ALTER LOC 7800 TO NO BITS SET C2	32	7382	
1755	AQ 65		DC	2K CONTROL SW TO RESTART AND PRES2	32	7414	
1756	AQ 66		DC	2S START2	7	7421	
1757	AQ 67		DCW	232	1	7422	
1758	AQ 68	PNERMS	DCW	2READY 10 CARDS JUST PUNCHED IN P2	32	7454	
1759	AQ 69		DC	2UNCH 9 EDGE FIRST FACE DOWN FOLL2	32	7486	
1760	AQ 70		DC	2OWED BY BLANK CARDS PRESS START2	32	7518	
1761	AQ 71		DCW	232	1	7519	
1762	AQ 72	ETHDU	DCW	200-2	3	7522	
1763	AQ 73	BRBK	B	2BCK	4	7523	B R11
1764	AQ 74		DC	22	1	7527	B A81
1765	AQ 75	BRBK1	R	2BCKX	4	7528	B A81
1766	AQ 76		DC	22	1	7532	
1767	AQ 77	ZZ	DCW	2002	2	7534	
1768	AQ 78	WRCNT	DCW	2002	2	7536	
1769	AQ 79	WKAREA	EQU	7800	2	7800	
1770	AQ 80	RDCNT	DCW	22	2	7538	
1771	AQ 81	226	DCW	20262	3	7541	
1772	AQ 82	ONHUND	DCW	21002	3	7544	
1773	AQ 83	PAS	DCW	2PASS2	4	7548	
1774	AQ 84		DCW	232	1	7549	
1775	AQ 85	MD1410	DCW	2SET COMPATIBILITY SW TO 1410/7012	32	7581	
1776	AQ 86		DC	20 PRESS COMPUTER RESET & START2	31	7612	
1777	AQ 87		DCW	232	1	7613	
1778	AQ 88	BRANCH	DCW	282	1	7614	
1779	AQ 89	NOP	DCW	2N2	1	7615	
1780	AQ 90	THRCNT	DCW	200002	4	7619	
1781	AQ 91	TEN	DCW	2102	2	7621	
1782	AQ 92	ERRLO	DCW	2TP WR ERR 2	13	7634	
1783	AQ 93		DCW	232	1	7635	
1784	AQ 94	ERRL	DCW	2TP RD ERR 2	13	7648	
1785	AQ 95		DCW	232	1	7649	
1786	AQ 96	TRDCNT	DCW	200002	4	7653	
1787	AQ 97	8K26	DCW	21702	3	7656	
1788	AQ 98	8K50	DCW	21522	3	7659	
1789	AQ 99	REELN	DCW	2END OF REEL2	11	7670	
1790	AR 00		DCW	232	1	7671	
1791	AR 01	EOFIN	DCW	2FALSE TP EOF 2	16	7687	
1792	AR 02		DCW	232	1	7688	

1410/7010-1401 TOPSY COMPATIBILITY TEST

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SFX CT LCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

1793	AR	03	RTX	EQU	7991			
1794	AR	03	7991	DCW	2 2	1	7991	
1795	AR	04	WTX	EQU	7992		7992	
1796	AR	04	7992	DCW	2 2	1	7992	

1410/7010-1401 TOPSY COMPATIBILITY TEST

SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

```

1797 AR 06 JCB
1798 AR 08 ORG
1799 AR 09
1800 AR 10
1801 AR 11
1802 AR 12
1803 AR 13
1804 AR 14
1805 AR 15
1806 AR 16
1807 AR 17
1808 AR 18
1809 AR 19
1810 AR 20
1811 AR 21
1812 AR 22
1813 AR 23
1814 AR 24
1815 AR 25
1816 AR 26
1817 AR 27
1818 AR 28
1819 AR 29
1820 AR 30
1821 AR 31
1822 AR 32
1823 AR 33
1824 AR 34
1825 AR 35
1826 AR 36
1827 AR 37
1828 AR 38
1829 AR 39
1830 AR 40
1831 AR 41
1832 AR 42
1833 AR 43
1834 AR 44
1835 AR 45
1836 AR 46
1837 AR 47
1838 AR 48
1839 AR 49
1840 AR 50
1841 AR 51
1842 AR 52
1843 AR 53
1844 AR 54
1845 AR 55
1846 AR 56

      1410 ROUTINE TO SET UP POST
      RESTART TYPE PROGRAM ID AND
      SET UP INSTRUCTIONS

      200802800004X2
      2000052
      2J08029 2
      2B-082
      2M2T001250W2
      2R0802922
      2M2T008167W2
      2R0804622
      2M2T008185W2
      2R0806322
      2M2T008208W2
      2R0808022
      2M2T008138W2
      2R0809722
      2M2T008228W2
      2R0811422
      2J08240 2
      2SET COMPATIBILITY SW TO 14012
      222
      2SET SENSE SW A ON2
      222
      2SET I/O CK STOP SW OFF2
      222
      2READY ALL I/O UNITS2
      222
      2PRESS START2
      222
      2008028000084X2
      2000082
      2J02007 2
      222
      ORG 8500
      2R0851901301R2
      2J08569 2
      2M21909000R2
      2R0851922
      2R0854322
      2R0855712
      2J08569 2
      20090020130132
      2R0858801303P2
      2J08638 2
      2M24909000W2

12 8011
6 8017
7 8024
4 8028
10 8038
7 8045
10 8055
7 8062
10 8072
7 8079
10 8089
7 8096
10 8106
7 8113
10 8123
7 8130
7 8137
28 8165
1 8166
17 8183
1 8184
22 8206
1 8207
19 8226
1 8227
11 8238
1 8239
12 8251
6 8257
7 8264
1 8265

8500

12 8511
7 8518
10 8528
7 8535
7 8542
7 8549
7 8556
12 8568
12 8580
7 8587
10 8597

```

1410/7010-1401 IDPSY COMPATIBILITY TEST

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INSTRUCTION

SFX CT LDCN

DPERANDS

LABEL OP

SEQ PG LIN

SEQ PG LIN	LABEL	OP	DPERANDS	SFX	CT	LDCN	INSTRUCTION
1847	AR 57	DCW	@R085882a	7	8634		
1848	AR 58	DCW	@R086123a	7	8611		
1849	AR 59	DCW	@R086261a	7	8618		
1850	AR 60	DCW	@J08638 a	7	8625		
1851	AR 61	DCW	@D09002013033a	12	8637		
1852	AR 62	DCW	@R0865701305Pa	12	8649		
1853	AR 63	DCW	@J08699 a	7	8656		
1854	AR 64	DCW	@F1a	2	8658		
1855	AR 65	DCW	@R086572a	7	8665		
1856	AR 66	DCW	@R086733a	7	8672		
1857	AR 67	DCW	@R086871a	7	8679		
1858	AR 68	DCW	@J08699 a	7	8686		
1859	AR 69	DCW	@D09002013053a	12	8698		
1860	AR 70	DCW	@Na	1	8699		
1861	AR 71	DCW	@D08710079911a	12	8711		
1862	AR 72	DCW	@B08743012911a	12	8723		
1863	AR 73	DCW	@B08919012921a	12	8735		
1864	AR 74	DCW	@J08000 a	7	8742		
1865	AR 75	DCW	@D07991087581a	12	8754		
1866	AR 76	DCW	@Uzu Ra	5	8759		
1867	AR 77	DCW	@R087552a	7	8766		
1868	AR 78	DCW	@R087743a	7	8773		
1869	AR 79	DCW	@R087881a	7	8780		
1870	AR 80	DCW	@J08938 a	7	8787		
1871	AR 81	DCW	@A0871007991a	11	8798		
1872	AR 82	DCW	@J088132a	7	8805		
1873	AR 83	CCW	@J08743 a	7	8812		
1874	AR 84	DCW	@D09002012913a	12	8824		
1875	AR 85	DCW	@D09002012923a	12	8836		
1876	AR 86	DCW	@J08000 a	7	8843		
1877	AR 87	DCW	@D07991079921a	12	8855		
1878	AR 88	DCW	@A0871007992a	11	8866		
1879	AR 89	DCW	@J088252a	7	8873		
1880	AR 90	DCW	@D0799208891a	12	8885		
1881	AR 91	DCW	@Uzu Ra	5	8890		
1882	AR 92	DCW	@R08862a	7	8897		
1883	AR 93	DCW	@R089053a	7	8904		
1884	AR 94	DCW	@R088561a	7	8911		
1885	AR 95	DCW	@J08000 a	7	8918		
1886	AR 96	DCW	@D07991079921a	12	8930		
1887	AR 97	DCW	@J08874 a	7	8937		
1888	AR 98	DCW	@B08844012921a	12	8949		
1889	AR 99	DCW	@J08000 a	7	8956		
1890	AS 00	DCW	a-a	1	8957		
1891	AS 01	ORG	9000			9000	
1892	AS 02	DC	a a	1	9000		
1893	AS 03	DCW	a3a	1	9001		
1894	AS 04	DC	a a	1	9002		
1895	AS 05	END	START				

/ -00 080